INFLUENCES ON COMPLETION FOR NVQ COURSES IN MANAGEMENT AT A UNIVERSITY BUSINESS SCHOOL

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by

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CHAPTER 1: INTRODUCTION

1.1 Research focus - the problem

The award of management qualifications on the basis of the assessment of work-based evidence of competence has been a major challenge to academic institutions in recent years, a challenge that many have welcomed. Proponents of the competence approach point out the very real benefits in terms of the link with work performance, a major weakness of traditional management development programmes.

However, based on the first four years experience with these programmes at the Bournemouth University Business School, there was evidence that the completion rate of managers on the competence based NVQ route was significantly lower than those on traditional 'taught' programmes. For the period covered by this research programme, the completion rate was 38 per cent (see Table 4.1) compared with a figure of typically 50 per cent for the DMS course. One client achieved a completion rate of 25 per cent after eighteen months which was below expectations. For another client group, only three completed after four years with four still continuing and nine having left the programme. Anecdotal evidence from other Business Schools suggest similar completion rates of around 40 per cent. In August 1997, Bedfordshire Social and Community Care Department reported a completion rate of 31 per cent overall for levels 3, 4 and 5.

Why should this be? The compilation of a portfolio of work based evidence of competence is certainly a significant task yet generally involves less work than a full taught programme. This is because participants do not have to attend regular weekly lectures and do not complete written, academic assignments. What is it then that separates those participants who progress through the programme and compile their portfolio at a steady rate from those who fall by the wayside? A significant proportion never produce their first unit of evidence.

Typically, non-achieving participants blame pressure of work and lack of time to complete their portfolio. But these factors also apply to participants on taught

courses where the completion rate is higher. A key difference, however, is that the NVQ approach is more flexible and normally requires the participant to prepare his/her own development and assessment plan. A typical taught programme will have a predetermined structure and prescribed deadline dates for submission of assessed work. Does this change in structure require different skills on behalf of participants?

The question then, is - what are the key qualities or competences needed to complete the NVQ 4/5 programme in management? What is it that separates those that complete from the non-finishers? Are there particular personal competences or attributes possessed by those that complete? Associated with this question is the issue of external influences that affect successful completion. What effect do course issues such as flexibility of coursework submission have on completion? Or support issues such as the degree of support received by the participant from his/her employer?

A tentative hypothesis might be that those with personal characteristics or competences, related to a strong achievement orientation or personal motivation are more likely to complete than those rated lower in these scales. The aim of this research therefore is to explore the relationship between both personal characteristics and competences and external influences on completion rates for NVQ 4/5 programmes in management.

1.2 Importance of Research

The competence movement and the development of NVQs have had one of the biggest impacts on management development and training for many years. In general, the approach has been welcomed by employers who value the work related nature of learning and assessment. There is a danger however that the approach will founder if completion rates are low. There is already evidence that some employers are holding back from supporting programmes for this reason. Better data on the profiles of successful participants would have significant implications for the selection and counselling of managers wishing to undertake NVQ programmes.

Better data on the participants and external influences would also inform programme design and the development of more effective support mechanisms.

1.3 NVQ programmes at the Business School, Bournemouth University

The researcher in this study was Head of Corporate Programmes at the Business School, Bournemouth University until December 1996. Initially the focus of this role was the delivery of short courses in management but an NVQ programme was introduced in 1991. This was in response to a request from a major client (Siemens Plessey Systems) for their managers to receive a recognised qualification for the completion of a programme of in-house short courses in management. Thus a company-based scheme was developed in conjunction with the company's management development manager. The necessary underpinning knowledge and skills were provided through a programme of in-house courses, some of which the Business School provided, the remainder being provided by other tutors.

The successful development and accreditation of this programme led to other in-house schemes being introduced in addition to an open programme. The numbers of managers registered gradually increased to over one hundred. However, by 1994 it became apparent that the completion rate for the overall programme was low. Some participants could not seem to get past 'first base' and had never submitted a single unit for assessment despite attending the portfolio workshops for more than a year.

In the initial years, participants were required to write their own learning contract which specified what learning they needed, when and where they planned to attend relevant courses and the timescale for submission of units for assessment. Since some participants seemed to find it difficult to adhere to their self-designed programme, steps were taken to introduce deadlines for submission of units. Thus participants were required to submit a specified number of units per year although they could decide themselves the order of the units they submitted. This did have some effect on improving the rate of submissions but the overall level remained below the expectations of both tutors and company training personnel when related to other programmes such as the Diploma in Management Studies (DMS).

1.4 Background to the development of NVQ courses in management

The vocational qualification movement in the U.K. gathered pace through the 1980s with the aim of accrediting qualifications within a national framework. The theme of competence had been taken up strongly by the National Council for Vocational Qualifications (NCVQ) who emphasised the importance of what people can do rather than what they know (Whitear, 1993).

The objective of the NCVQ was for a new range of qualifications based on nationally agreed and determined standards of competence that would lead to overall uniformity regardless of the awarding body. Much time and effort was put into revising existing qualifications and developing new ones at all levels that focussed on the assessment of competence in the workplace. NVQs were a key plank of the Government's strategy for the development of the skills that the country needs for its future economic prosperity. National education and training targets were established and promoted widely through Training Enterprise Councils (TECs) and industry lead bodies. They were based on the achievement of NVQs at various levels as follows:

1 By 1996, all employees should take part in training or development activities as the norm.

2 By 1996, at least half the employed workforce should be aiming for qualifications or units towards them within the NVQ framework, preferably in the context of individual action plans and with support from employers.

3 By the year 2000, fifty percent of the employed workforce should be qualified to NVQ Level 3 or its academic equivalent as a minimum.

4 By 1996, at least half of all medium sized and larger organisations should qualify as Investors in People, assessed by the relevant TEC.

In the field of management the Management Charter Initiative (MCI) were appointed as the industry lead body responsible for developing and updating management standards which would form the basis for the new NVQ qualifications in

management. The standards were presented as a set of competence statements that were derived using functional analysis (see paragraph 2.5.1 for a more detailed discussion of the development of the standards). The result for the management standards was a series of key roles, divided into units and elements of competence (see Appendix 1). Standards for three levels of management – supervisory, first-line and middle management – were developed initially with senior management standards following later.

Thus, whilst the National Management Standards were designed to be used for a variety of purposes, the parallel development of the vocational qualification movement meant that a major use was as a basis for competence based management qualifications. In qualifications that use the MCI Standards, assessment is outcome based. Thus the Standards lay down what a manager is expected to be able to do. Assessment is the process of collecting evidence and making judgements on whether the performance criteria have been met (NCVQ, 1989). Evidence is presented by the candidate manager in a portfolio of evidence of competence derived from workplace activities.

The use of the standards in this way resulted in the biggest impact on the design of management courses for many years.

This is because the assessment was made on whether a manager was competent against the standards. The assessment was therefore **independent of the method of learning.** Consequently a candidate for a qualification may not need to take a particular course of learning provided that (s)he can demonstrate competence. This caused significant tensions in Universities and Colleges who had for years been devoted to the development of course programmes that emphasised learning and with assessment schemes that sought to test whether or not that learning had been achieved.

1.5 Aims of Qualification Courses in Management

The overall aim of management education and training is to enable participants to become more effective managers. How that is best achieved is subject to widely differing views. Programmes vary from one-day short courses not linked to any qualification to postgraduate qualification programmes such as full length MBA courses. Competence based qualification courses using the MCI standards are generally at postgraduate/post-experience Certificate and Diploma level.

It is generally recognised that management development involves developing both knowledge and skills. Furthermore that performance is enhanced by a knowledge and understanding of theories and concepts underpinning effective behaviour and actions.

However, the extent to which theoretical concepts, and indeed which concepts, are included in management development programmes varies significantly. In a study of developments in the design of the British MBA, Miller and Money (1990) identified a direct correlation between the length of a programme and the propensity to discuss theoretical issues. However there was a tendency for most newer MBA programmes to avoid theoretical or so-called academic content in favour of learning practical skills. Miller and Money accepted that the argument to focus on practical skills was persuasive because the candidate does not have to learn 'useless concepts or paradigms'. Nevertheless, they argued the need for an understanding of theoretical concepts and comment that newer MBA programmes that avoid theoretical content are based on false assumptions:

"This approach (i.e. the focus on practical skills) *assumes that there is a body of knowledge pertaining to business which is in a steady state and therefore will have little added to it through new developments in theory. This is far from the truth."*

(Miller and Money, 1990, p6)

They argue that business schools could be said to be in the same position that medical schools found themselves in at the turn of the century.

"We have some corpses on the table but we have not quite worked out the theory on how it is all supposed to work". *(Miller and Money, op. cit. p6)*

Longer programmes of study such as the MBA and DMS typically emphasise the aim of developing the analytical, critical and evaluative skills of participants in addition to providing a sound knowledge base. Marshall (1994) clearly stated that, at Bath University, the aim was to develop people's thinking skills and ability to "think in action". Interestingly she commented that students often have difficulty with this approach. They tend to assume that management is a science with an established body of knowledge and that business has a set of formulae to deal with each situation.

Competence assessed programmes emphasise the need to ensure that participants are currently working to 'good management practice'. The standards themselves were derived by researching the views of over four thousand practising managers and not by academics or training departments. Assessment is made of the ability of programme participants to function competently in the four key roles of managing operations, managing resources, managing people and managing information. Participants are required to build a portfolio of work-based evidence of competence as demonstrated in their managerial job. Whilst this form of assessment does not explicitly assess knowledge, it leans heavily on the premise that effective performance cannot be achieved without that underpinning knowledge. It does, therefore, assume that there is an established body of knowledge.

1.6 Criticisms of Management Programmes

Both taught programmes such as the DMS/MBA and competence based programmes have their critics.

In the case of MBA/DMS type programmes, this criticism focuses on the perception by some employers that programmes lack relevance to the real world. Business Schools have been accused of developing analysts rather than managers. This criticism is not confined to employers. Mintzberg (1973) in his study of the nature of

managerial work also maintained that management schools, whilst good at training specialists, *"for the most part have not trained managers"*. He argued that:

"The serious training of managers will only take place when skill training takes a serious place next to cognitive learning". *(Mintzberg, 1975, p61)*

Whilst this observation was made in the mid-seventies, the balance between cognitive learning and skill development remains an ongoing source of debate.

It is also apparent that, whilst DMS/MBA programmes will certainly improve the performance of those participants who possess given managerial qualities, their credibility is affected when employers can still identify some DMS/MBA graduates who will, quite obviously, never make it as a manager. Is there, then, something fundamental still missing from such programmes?

On the face of it, competence based programmes overcome this problem through their emphasis on work based performance. However, despite a generally positive response from employers who welcome the practical nature of the approach, there have been significant criticisms, notably from academic quarters.

Typical criticisms include the reductionist nature of the standards (Burgoyne 1989, 1993, Holmes 1990) and the use of functional analysis to break the management task down into observable units and elements. It is argued that the approach also focuses very much on the current job and assumes that once a person is competent, then they continue to be so.

Burgoyne (1989) also suggests that one special feature of management is that it has to create and define its own task, rather than tackle one that is pre-structured for it. He supports the holistic nature of management and the need to see how competences relate to the whole person, not just when (s)he is in the role of the manager. He therefore sees the universal, mechanistic, differentiated list of managerial competences as inappropriate.

Fulton (1994) argues that the competence model has resulted in an assessment-driven scheme. This over-emphasis on assessment and, in particular, on the gathering of evidence of achievement has resulted in an undervaluing of the importance of learning.

A report by Smithers (1993) has drawn adverse comparisons between several NVQs and the qualifications they have replaced. Smithers was particularly concerned about the lack of emphasis on knowledge and learning. His report maintained that some NVQs also fell short when compared with qualifications on offer in Holland and Germany. Smithers argued that the root of the problem lay in NCVQ's departure from established education practice. Amongst other reservations is the fact that underpinning knowledge and theory are not separately tested but are inferred through bureaucratic procedures.

However a report by the Confederation of British Industry (CBI, 1994) reviewed the results of a survey of NVQs and SVQs amongst its membership. The CBI is a firm supporter and founder member of the Management Charter Initiative. The consultation exercise found a widespread goodwill amongst employers towards the underlying principles of vocational qualifications (VQs) and there was a determination to get the system up and operating. A key recommendation was that serious consideration should be given to a self development unit in all VQs because of concern that NVQs could be just endorsing current practice with insufficient emphasis on development.

1.7 Interaction of Knowledge, Personal Competences and Competence at Work and Perceptions of Qualifications

Notwithstanding the foregoing criticisms of competence based approaches and NVQs, the MCI model of competence does recognise the roles of underpinning knowledge and understanding and also of personal competences. Personal competences is the way a manager goes about things i.e. his/her behaviour as a manager. This interaction may be portrayed as three overlapping circles as shown in Figure 1.1.

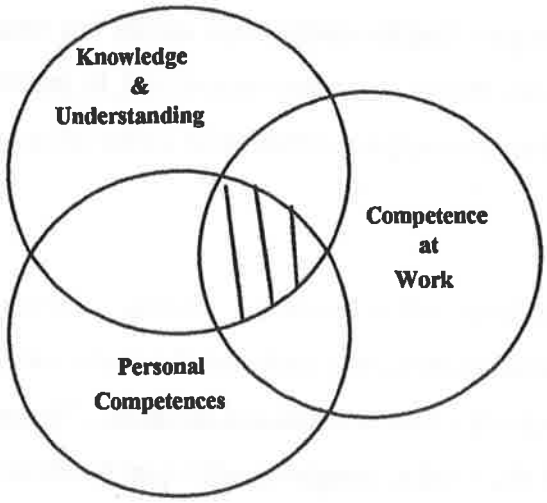

Figure 1.1 The interaction of knowledge, personal competence and competence at work.

Competent performance at work is most effective and sustainable when both underpinning knowledge and understanding and personal competences are present. This is represented by the shaded area in Figure 1.1 where all the circles overlap. Performance may also be competent when only one or neither of the other two variables are present. This may be for a variety of reasons including luck, effective support from other members of the team or the result of following strict company procedures. Consider for example, the recruitment of a new member of the team. If a manager has a full knowledge of recruitment and selection procedures and has the personal skills of interviewing, (s)he is more likely to appoint the right person. This competence is then more likely to be repeatable over a period of time and in different situations, departments or organisations.

However, the three components of Figure 1.1 are not always given equal emphasis. A major criticism of the competence approach is that it only superficially treats knowledge, understanding and personal competence because they are not specifically assessed. Whilst you can infer knowledge and personal competence to some degree from performance in the workplace, the presence of other influencing factors makes the assessment incomplete. Thus assessment based on competence at work is perhaps more accurately represented by Figure 1.2.

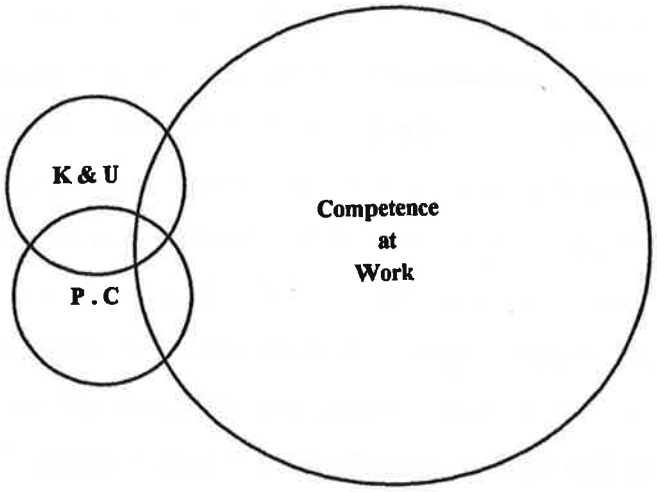

Figure 1.2 Interaction of knowledge, personal competences and competence at work for competence based programmes

On the other hand, the critics of more traditional approaches to management courses argue that they overemphasise the role of knowledge and understanding and, to a lesser extent, personal competences. This is shown diagrammatically in Figure 1.3

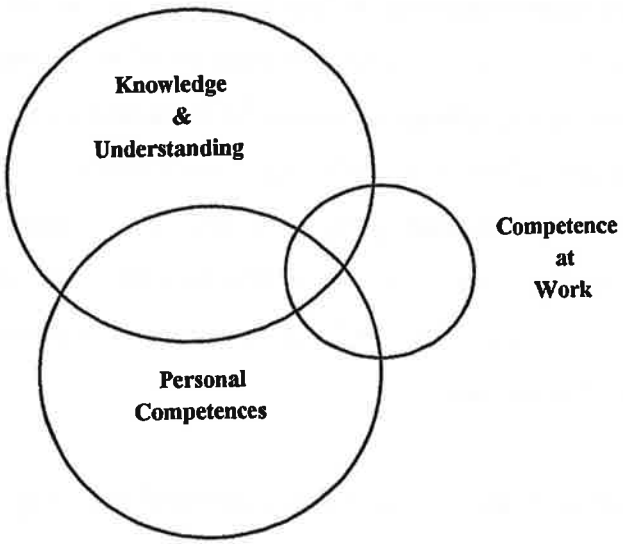

Figure 1.3 Interaction of knowledge, personal competences and competence at work in traditional programmes.

Supporters of competence based approaches point out that this is the weak link in traditional programmes and that the factor of performance at work is rarely considered. This is a major criticism when one considers that, in the final analysis, it is improved performance at work with which we are all concerned.

In the author's experience of working with a variety of managers and management courses, perceptions of management qualifications by managers in organisations are often based on the perceived link, or lack of link, between the knowledge, understanding and personal competencies developed on a course and improvements in performance at the workplace. Where learning is seen to be 'academic' and of no practical application, management qualifications are often seen as of little value other than to help employees improve their chances of securing a job in another organisation. Where learning is seen as making a direct contribution to work performance then they are generally held in higher esteem. This will therefore affect the support that a participant receives from his/her employer whilst attending the course.

1.8 Summary

The focus on management competence has had a significant impact on management development activities over the last ten years. The award of management qualifications on the basis of the assessment of work-based evidence of competence has been a major challenge to academic institutions, a challenge that many have responded to positively but which has been severely criticised by others. A significant polarisation of opinion has developed. Proponents of the competence approach point out the very real benefits in terms of the link with work performance, a major weakness of traditional management development programmes. Criticisms are various but include:

- concern with the reduced emphasis on underpinning knowledge and the tendency to focus more on assessment rather than development.
- the reductionist nature of the MCI National Management Standards.

This chapter provides the background to the problem of low completion rates and the issues surrounding the development of competence based approaches to management qualifications. The low completion rates relative to other management courses are a major hurdle that NVQ programmes have to overcome. Chapter will review the development of competence and the different approaches used. Different schools of thought on learning are explored followed by a review of the research into student

attrition. This then provides the basis for an analysis of the influences on course completion for NVQ programmes in management that is developed in Chapter 3.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter comprises three main parts. The first part covers the concept of competence, what we understand by competence, how it developed and the important research contributions on the subject. It is important to clarify the issues not just because the research is dealing with a competence-based course. It is also important because the competencies of course participants will be assessed as a means of exploring the differences between those who complete the NVQ programme and those who make no significant progress.

The second part of the chapter deals with issues relating to how adults in general, and managers in particular, learn. Learning on an NVQ programme is viewed more broadly than on traditional taught programmes and is considered to come from a wider variety of sources including work-based learning. Hence this may well have implications for completion rates.

The third and major part of the chapter deals with reviewing previous research on student completion rates and attrition. This provides a basis for developing a model of influences on completion for NVQ programmes in management that can be tested through field research.

2.2 The skills and qualities of managers

As we near the year 2000, a look back reveals how much the concept of the manager has emerged and developed during the 20th century. From the early years of Taylor and Fayol, there has been a constant search to establish the principles and practice of good management, the concept of management effectiveness and the skills and qualities of managers.

Significant contributions have been made, amongst many others, by Carlson (1951), Burns (1957), Sayles (1964), Stewart (1967) and Mintzberg (1973). Stewart's diary

study of managers was particularly innovative because it was the first in the U. K. to try and identify what managers actually do rather than the functions that they performed. Her research was based on a sample of 160 managers from a variety of types of organisation and a variety of job functions. She identified five managerial job profiles based on the way managers spent their time, the number of contacts with other people, the degree of fragmentation in their work and the variety in their jobs. She was the first to admit, however, that this was not a generic classification and that a different sample of managers might well have produced a different grouping. The five profiles were:

(i) The Emissaries
(ii) The Writers
(iii) The Discussers
(iv) The Trouble Shooters
(v) The Committee Men.

The value of Stewart's work was in demonstrating that there is no universal set of managerial skills that will apply in any managerial job. The Emissaries, those managers that spent a lot of time outside the company talking to clients, suppliers etc., need a different set of skills from, for example, the Writers who spent much of their time in producing written documents and little time liaising with outside contacts. However, the focus was on finding out how managers spent their time and the nature of the managerial job. The study did not explore how well the job was performed or the managerial skills needed to perform the job effectively.

Mintzberg (1973) in the USA drew heavily on the work of Stewart, Carlson and others in his research on the nature of managerial work and the skills of the manager. He analysed the findings of previous studies and combined the data with his own study of five chief executives in middle to large-sized organisations. He used a structural observation method and spent one intensive week of observation for each executive in order to capture data on both work characteristics and job content.

From his research Mintzberg identified ten important roles of the manager. He then derived eight key skills, which he considered necessary to undertake these roles effectively. These were as follows:

- peer skills
- leadership skills
- conflict resolution
- information processing
- decision making under ambiguity
- resource allocation
- entrepreneurial
- introspection.

The significance of Mintzberg's work lay in his attempt to derive the skills that managers need in order to perform their managerial work more effectively. He believed that if managers had a better insight into the nature of their work and the skills needed then this would enable them to organise their work more effectively. He asserted that performance depends on how well (s)he understands and responds to the pressures and dilemmas of the job. However, one could argue that, whilst such insight is certainly helpful, insight alone doesn't guarantee that the individual can act on the insights gained. The manager may not have the personal qualities to enable him/her to develop the relevant skills further.

Another weakness of Mitzberg's list of skills is that they are defined functionally, that is by reference to what they are used for. Concepts such as 'leadership skills' and 'entrepreneurial skills' are functional in this respect. It is obvious that one needs leadership skills in order to lead but the definition doesn't say what it is that a leader needs to do in order to improve his/her leadership ability.

In 1976, Burgoyne and Stuart (1976) working at the University of Lancaster produced their hypothesised model for the skills, qualities and attributes of effective managers as shown in Figure 2.1. This was a theoretical model based on the analysis of existing theories and research relevant to managerial qualities. It represents an attempt to give structural definitions of managerial qualities in terms of what it is

'within' the person that leads to appropriate behaviour. The significance of this model is that it highlights different levels of skills and attributes needed for effective performance. At the basic level, it recognises the need for relevant knowledge, both of the organisation and of the given profession. At the next level, various skills defined as appropriate behavioural responses are described. A higher order of skills called 'meta-skills,' such as creativity, mental agility and learning skills are then identified. Managers with well-developed meta-skills tend to be better at learning and developing lower level skills. The model shown in Figure 2.1 was later modified by the addition of 'Self Knowledge' to the meta-skills (Pedler, Burgoyne and Boydell, 1994).

A further aspect of this work was an attempt to test the model empirically by relating the various skills and qualities to organisational performance, an approach discussed more fully in the next section in relation to the competence movement. The model was tested on a sample of 28 managers from a single organisation representing a vertical cross section. It was established that possession of qualities and skills in each of the areas correlated with one or more of a series of success/effectiveness criteria at a sufficiently high level to suggest that the model had some general validity. The measures of success and effectiveness used were a mixture of objective data and subjective rating by the interviewee. The three dimensions for success/effectiveness that emerged from a principal components analysis were:

a) Having reached a high level of seniority as measured by salary grade
b) Fast career progress
c) Effective performance in the job (as measured by self-rating).

The results of correlating the skill/quality measures with the success/effectiveness measures suggested that for working at a senior management level, the following qualities were important (correlation coefficient r shown in brackets).

- Mental Agility ($r = 0.65$)
- Proactivity ($r = 0.85$)
- Emotional Resilience ($r = 0.88$)

- Continuing Sensitivity to Events (r = 0.82)
- Command of Basic Facts (r = 0.67).

For fast career progress, the following qualities were identified as important.

- Mental Agility (r = 0.67)
- Creativity (r = 0.50)
- Analytical, Problem-solving and Judgement Skills (r = 0.75)
- Professional Knowledge (r = 0.41)
- Command of Basic Facts about situations external to the organisations (r = 0.53).

For general effectiveness in jobs of all kinds and levels, the following were important.

- Balanced Learning Habits (r = 0.89)
- Human/Interpersonal skills (r = 0.39).

The results do suggest that different dimensions of success require different qualities. It is interesting to note, for example, that the qualities identified as needed for fast career progress are different from those needed for general effectiveness in a management role, particularly in relation to Human/Interpersonal skills. This would appear to suggest that general effectiveness in a job is not necessarily a requirement for fast career progress!

However, although the research describes the three outcome measures generally as success/effectiveness criteria, the first two of these dimensions – level of seniority and fast career progress - are more measures of personal career success than of effective job performance. Whilst promotion may imply successful performance in their current role, just because a manager reaches a higher level in the organisation does not necessarily mean that his work group performance is high. He may have had a good team who covered for his mistakes. Similarly, fast career progress may be achieved through luck, being in the right place at the right time or through a series of short-term achievements at the expense of longer-term results.

The third dimension of effective performance in the job was measured by a self-rating in an interview situation. Whilst self-ratings of performance have been used by other studies (e.g. Dulewicz, 1992), these have generally been complemented by supervisor or peer ratings of performance. Such studies have shown differences between self-ratings and supervisor ratings so the use of self-ratings alone is questionable.

The sample of managers used in the empirical research was small and from only one organisation. Burgoyne and Stuart recognised that this was only an initial test, that their tentative conclusions may or may not apply to management in general and that further validation work was needed. However, it does provide a useful early attempt to link a model of managerial qualities to work performance in the UK. It also suggests a link between learning habits and skills and work performance, a theme which is taken further in this thesis (see paragraph 2.8).

'META'-SKILLS	Balanced Learning Habits & Skills Mental Agility Creativity
SKILLS	Proactivity Emotional Resilience Social Skills & Abilities Problem Solving, Analytical & Decision/Judgement Skills Continuing Sensitivity to Events
KNOWLEDGE	Relevant Professional Knowledge Command of Basic Facts

Figure 2.1 A model of managerial skills, qualities and other attributes (adapted from Burgoyne and Stuart, 1976, p22)

2.3 The Concept of Competency

In recent years, the focus has been on the concept of management competence. Much of the previous research had been based on task or functional analysis and explored what activities needed to be performed in the job. Although, for example, Stewart (1967) identified the differing nature of management jobs and Mintzberg (1975) inferred a range of managerial skills, there was no order of importance to these skills or relevance to a particular job. The focus was more on the job rather

than the person in the job. The competence movement was concerned to identify the characteristics of an individual that would enable a person to perform the necessary activities and to establish a causal link between characteristics of people and performance in a job.

Thus Boyatzis (1982) defined a job competency as

"an underlying characteristic of a person which results in effective and/or superior performance in a job." A job competency is *"an underlying characteristic of a person in that it may be a motive, trait, skill, aspect of one's self-image or social role, or a body of knowledge which he or she uses". (Boyatzis, 1982, p21)*

Spencer and Spencer (1993) refined this definition as follows:
"a competency is an underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job or situation". (Spencer and Spencer, 1993, p9)

Others have used similar definitions (Schroder, 1989; Woodruffe, 1992). The key themes of each definition are, however, the characteristics of the individual, his/her work performance and the causal relationship between the two.

Because job competencies are underlying characteristics, they can be said to be generic. Thus they will influence behaviour and actions in a range of situations. The effect of a person's behaviour will vary depending on the appropriateness of that behaviour in any given situation. For a characteristic to be a competency, it is required that deliberate action is taken to achieve specific outcomes in a given situation. In order to define a competency, therefore,

" we must determine what the actions were and their place in a system and sequence of behaviour and what the results or effects were and what the intent or meaning of the actions and results were". (Boyatzis, op. cit., p22)

In other words, if you do something by chance and happen to get it right, this does not represent a competency

As Spencer and Spencer (1993) put it:

" a characteristic is not a competency unless it predicts something meaningful to the real world" (p13) and *"behaviour without intent doesn't define a competency"(p12).*

The characteristics that make up competencies are of different types and levels (Boyatzis, 1982; Spencer and Spencer, 1993). These are as follows:

Motives

The things a person consistently thinks about or wants that cause action. Motives drive, direct and select behaviour toward certain actions or goals and away from others. An example is a motivation to achieve.

Traits

Physical characteristics and consistent responses to situations or information. Examples include emotional self-control and a tendency to show initiative.

Self-concept

A person's attitudes, values or self-image. An example is self-confidence – a person's belief that he or she can be effective in almost any situation is part of that person's concept of self.

Knowledge

Information a person has in specific subject areas.

Skill

The ability to perform a certain physical or mental task. Mental or cognitive skill competencies include, for example, analytical thinking and planning skills.

Some of these competencies, such as knowledge and skill, are more visible than others. Self-concept, trait and motive competencies are deeper, and more hidden. Competencies may also exist at several levels. Consider, for example, a planning competency. At the motive level there may be a desire to achieve goals as a means of improving one's performance. At the skill level, the competency will show in the ability to state a goal, list the action sequences that would result in achieving the goal and determine costs and benefits of using this plan of action. A person possessing the

competence at the motive level will be more likely to think about plans and goals than someone who doesn't. A person possessing the competency at the skill level will be more likely to develop a plan of action, assess the risks etc. once the goals have been identified. Different levels of competency will affect different aspects of the individual's application of that competency.

Boyatzis defined effective job performance as:

"Effective performance of a job is the attainment of specific results (i.e. outcomes) required by the job through specific actions while maintaining or being consistent with policies, procedures, and conditions of the organisational environment."

(Boyatzis, op. cit. p12)

This definition includes the statement that specific results required by the job occur because specific actions have been taken. Results obtained through random events are excluded because they cannot be considered as evidence of effective performance of a job.

Boyatzis' model for effective job performance is shown in Figure 2.2.

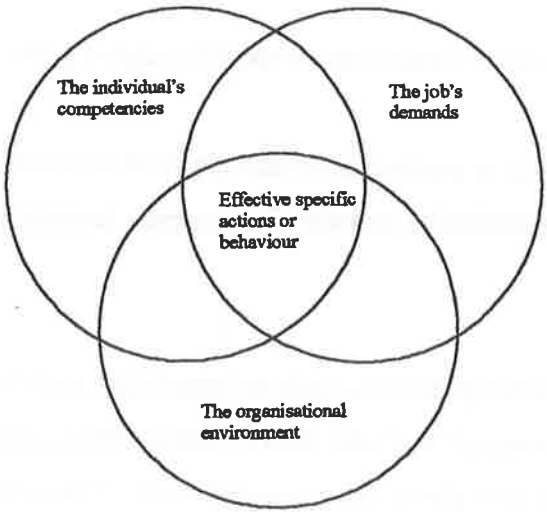

Figure 2.2 A model of effective job performance (Boyatzis, 1982, p13)

Figure 2.2 shows the inter-dependence of effective job performance with the individual's competencies, the demands of the job and the organisational environment. Boyatzis maintained that effective action, and therefore performance, will occur when all three of the critical components of the model are consistent. If any one or two of these components are inconsistent and do not correspond with each other, then it is expected that ineffective action or behaviour will result.

Competency studies have used three main methods of measuring work performance, these being:

1. Supervisory nominations or ratings.
2. Peer nominations or ratings.
3. Work output measures.

Whilst a work output measure such as the volume of sales achieved by a salesperson is the most direct measure of work performance, such measures are not available for many managerial jobs. However, supervisory and peer nominations and ratings have been shown to be valid measures of work performance. Lewin and Zwany (1976) reviewed studies that demonstrated the positive link between peer ratings and nominations and various work-output measures and hence supported the use of ratings as a measure of work performance. They also reported that supervisory and peer ratings tend to be highly correlated.

In both the USA and the UK, a major focus of research has been on developing appropriate models of managerial competencies. The different approaches adopted have caused some confusion and reflect the differing research perspectives. The next section reviews the major studies.

2.4 Competence: behavioural approaches

2.4.1 The development of competency models

The competency movement developed out of a desire to identify managerial characteristics that were significantly related to superior organisational performance. Organisations that found themselves operating in environments of significant change,

rapidly changing technologies and changes in social values needed to focus on the organisational structures and managerial qualities required to increase efficiency, improve quality and, indeed, to survive in an increasingly competitive environment.

Assessment Centres had been used since the 1950s both in the UK and the USA. According to Dulewicz (1989), although the term assessment centre is American, this technique was pioneered by the British War Office selection board, then adopted by the Civil Service and used by a number of large British companies before being taken up by the Americans. The aim of assessment centres is to assess candidates against a series of 'dimensions' or clusters of behaviour that are specific, observable and verifiable, usually for the purpose of predicting potential rather then identifying current performance. This has resulted in some authors treating the assessment centre approach and the competency approach as the same. Pinder and Herriot commented that:

"Boyatzis' list of competencies resembles a typical list of dimensions assessed in a managerial assessment centre." *(Pinder and Herriot, 1990, p211)*

However, Dulewicz has argued that, although the assessment dimensions in assessment centres have now been called 'competencies', they are not usually directly related to Boyatzis' model.

It was the research of McClelland (1973, 1976) and Boyatzis (1982) working at McBer and Company in the USA, that is generally considered to be the work that initiated the development of the competency approach. McClelland (1973) was involved with testing candidates for entry into the United States Foreign Service as Field Service Information Officers. A series of IQ tests were used to screen the candidates. He realised, however, that the questions tended to be ethnically centred in the USA and were, therefore, less appropriate for people working overseas. This suggested that they were testing the wrong thing – they were testing for intelligence, not the ability to do the job. He therefore devised a set of tests to identify competence rather than IQ.

Boyatzis (1982) set out to determine which characteristics of managers were related to effective performance in a variety of management jobs in a variety of organisations. At that time, he and his colleagues had undertaken a number of competence assessment studies on various management jobs. Boyatzis therefore decided to reanalyse all the available information in its raw form. This information came from 12 organisations and more than 2,000 people in 41 management jobs in those organisations. Twenty-one of the jobs were in four organisations from the public sector and twenty were from eight organisations in the private sector.

The method used was a Job Competence Assessment method developed by staff at McBer and Company. This used a five-step approach to generate a validated model of characteristics needed for effective or superior performance in a job. Low, average and high performing managers were studied. The approach differed from others in that it examined the person in the job, not only the job, in order to produce a model of competence, *"not merely a laundry list of characteristics" (Boyatzis, 1982, p43)*, that could be validated by performance data. The competencies associated with effective performance by managers were thus derived.

Boyatzis also distinguished between threshold competencies and competencies needed for effective and/or superior performance.

"A threshold competency is a person's generic knowledge, motive, trait, self-image, social role, or skill which is essential to performing a job, but is not causally related to superior job performance". *(Boyatzis, 1982, p23)*

Boyatzis' model consisted of 19 competencies in six clusters as shown in Figure 2.3.

As indicated, some of these competencies were shown to relate to effective or superior performance in the job whereas others were threshold competencies.

Goal and action management cluster	
Efficiency orientation	(s)
Proactivity	(s)
Diagnostic use of concepts	(s)
Concern with impact	(s)
Leadership	
Self confidence	(s)
Use of oral presentations	(s)
Logical thought	(t)
Conceptualisation	(s)
Specialised knowledge	
Specialised knowledge	(t)
Human resource management	
Use of socialised power	(s)
Positive regard	(t)
Managing group process	(s)
Accurate self-assessment	(t)
Directing subordinates	
Developing others	(t)
Use of unilateral power	(t)
Spontaneity	(t)
Focus on others	
Self control	(s)
Perceptual objectivity	(s)
Stamina and adaptability	(s)

(s) competency leading to effective and/or superior job performance
(t) threshold competency

Figure 2.3 Boyatzis' model of competencies (Boyatzis, 1982, p229)

Lyle and Signe Spencer (1993) also worked with the Hay/McBer Group building on the work of Boyatzis. In 1993 they published an update of the Group's work.

The Spencers used Behavioural Event Interview-based studies of more than 200 jobs to develop a competency dictionary. This is a generic set of competencies for superior performance across a wide range of jobs. They used a grounded theory approach by working backwards from the criterion of superior or effective performance in a job to identify the characteristics of the people who performed at those levels. Their competency dictionary is presented in six clusters with twenty competencies as shown in Figure 2.4.

1. Achievement and action cluster
   - achievement orientation
   - concern for order, quality and accuracy
   - initiative
   - information seeking.

2. Helping and human service cluster
   - understanding
   - customer service orientation.

3. Impact and influence cluster
   - impact and influence
   - organisational awareness
   - relationship building.

4. Managerial cluster
   (a specialised subset of the Impact and Influence cluster)
   - developing others
   - directiveness, assertiveness and use of positional power
   - teamwork and co-operation
   - team leadership.

5. Cognitive cluster
   - analytical thinking
   - conceptual thinking
   - technical/professional/managerial expertise.

6. Personal effectiveness cluster
   - self control
   - self confidence
   - flexibility
   - organisational commitment.

Figure 2.4 A Competency Dictionary (Spencer & Spencer, 1993)

This general model for competencies at work was tested on a range of occupations including salespeople, entrepreneurs and managers. For managers their findings were based on 36 different managerial roles covering a wide range of levels (first-line supervisors to general managers) in a range of functions (production, sales, marketing, human services, educational, etc.) and environments (military, educational, financial services, etc.). Although their findings were substantially similar to those of Boyatzis, there were some variations due to the different levels of analysis and also to the inclusion of new data. The generic managerial model is shown in Figure 2.5.

Weight	Competency
******	Impact and influence
******	Achievement orientation
****	Teamwork and cooperation
****	Analytical thinking
****	Initiative
***	Developing others
**	Self confidence
**	Directiveness/assertiveness
**	Information seeking
**	Team leadership
**	Conceptual thinking
Base requirements	Organisational awareness and Relationship Building
	Expertise/Specialised knowledge

Figure 2.5 A generic competency model of managers (Spencer and Spencer, 1993, p201)

According to Spencer and Spencer:

"The generic model for managerial competencies highlights the similarities between all the managerial jobs and provides the background against which the special characteristics of different levels, functions and environments stand out. It is not intended to be applied to any particular job. Neither is it an argument for the 'all-purpose, can manage anything' image of the manager".

(Spencer & Spencer, 1993, p201)

An important aspect of the work of both Boyatzis and Spencer and Spencer is the distinction between 'threshold competencies' that everyone in a job needs to be minimally effective and 'differentiating competencies' that distinguish superior from average performers.

2.4.2 Schroder's High Performance Competencies

Schroder (1989) also links managerial competence directly with organisational performance. He identifies the need for three classes of competency as follows:

(a) Entry Level Competencies: these are the abilities and skills that entry-level personnel bring to the organisation.

(b) Basic Competencies: these competencies are defined by the knowledge and skills needed to perform the jobs or functions of managing. They represent personal effectiveness skills that are more task related.

(c) High Performance Competencies: these competencies are defined as a relatively stable set of behaviours that produce significantly superior workgroup performance in more complex organisational environments. Schroder himself comments that this definition draws heavily on the work of Boyatzis as can be seen from the previously quoted definition.

In this differentiation between Basic and High Performing Competencies (described as B-competencies and H-competencies), we see a similarity with Burgoyne and Stewart's identification of skills and meta-skills and Boyatzis' threshold and superior competencies.

Schroder's model presents eleven high performing competencies that he identifies as being significantly related to more effective organisational performance in more complex environments. He based his model on a review of previous studies. However, in reviewing these he rejected studies that did not make a clear link between competencies and superior performance at work. For example, he rejected those studies that used indirect criteria for performance such as speed of promotion or peer/supervisor ratings alone (for example, Burgoyne and Stuart, 1976). He argued that speed of promotion does not tell us whether or not the workgroup of rapidly promoted managers perform better than the workgroups of others. He also rejected studies that used job analysis as the method for identifying dimensions of

managerial skills arguing that job analysis tends to focus more on the basic competencies. He considered that job analysis studies could not provide evidence that the dimensions identified were significantly related to superior workgroup performance.

One could argue that Schroder was being unnecessarily restrictive in his review of other studies by imposing the above criteria for measures of work performance. The distinction between measures of career progress and work performance is an important one as shown in relation to Burgoyne and Stuart's (1976) findings. Measures such as speed of promotion do not necessarily reflect effectiveness in the managerial role. However, as discussed earlier (paragraph 2.3), other studies have supported the use of supervisory and peer ratings as a measure of a manager's performance. By restricting his review to direct measures of performance only, he may well have missed out other important studies of competencies that would have strengthened his findings.

The result was that Schroder based his model on three comprehensive studies that he considered did show significant relationships between the ability to use certain general (non-task-specific), transferable managerial behaviours and superior organisational outcomes. These three studies were:

The Boyatzis Studies

Schroder considered the Boyatzis studies (1982) referred to earlier as the most extensive. The behavioural event method was used to assess the competencies of low, average and high-performing managers in a variety of jobs and organisations. A combination of peer and supervisor nominations and work-output measures were used as the criteria for organisational effectiveness. The Boyatzis model of competencies leading to superior performance is shown in Figure 2.3.

The Florida Council Study

This study was commissioned by the Board of the Florida Council on Educational Management (Huff, Lake and Schaalman, 1982) to explore the relationship between a school's performance and the competencies of the principal. The external criteria used to define the organisational effectiveness

of schools were student scores on tests of maths and communication skills. Based on these scores, schools of average and superior performance were identified. Again the behavioural event interview was used and the study identified seven competencies that significantly differentiated between the principals of average and superior performing schools.

The Cognitive Studies

This series of studies was conducted over a period of twenty years and used a laboratory simulation method in which groups of individuals performed complex tasks (Schroder, Driver and Streufert, 1967; Streufert and Swezey, 1986). Behavioural observation and various objective indices and ratios were used to measure competencies. At their highest levels of performance, team members displayed significantly more of four kinds of cognitive behaviour.

Schroder compared the findings of these three series of studies that used different methodologies, different people and different settings. There was agreement between them that certain characteristics of managers or group members are consistently and significantly related to superior organisational or group performance. Overall, four competencies were confirmed by all three sets of studies, these being:

- Information Search
- Concept Formation
- Conceptual Flexibility
- Interpersonal Search.

The laboratory studies, which used complex simulations, were not considered to be relevant for the remaining competencies since these studies focused on the cognitive competencies only. Three competencies received cross-validating evidence in both the Boyatzis and Florida Council studies. These were:

- Impact
- Proactive Orientation
- Achievement Orientation.

Three competencies were validated by the Boyatzis studies, but were not identified by the Florida Council study. These were:

- Managing Interaction
- Self Confidence
- Presentation.

Schroder suggests that these may not have been identified by the Florida Council study because of the structure and environment of schools which would be expected to demand Self Confidence and Presentation. On the other hand, Managing Interaction, associated with involving others and stimulating teamwork, may have little demand due to the constraints of central control and its effect on the teaching staff. Whilst this argument may seem plausible, it does weaken the validation of these three competencies. Furthermore, the final competency of Developmental Orientation is included by Schroder even though it was not found to relate to superior organisational performance in either relevant study. Boyatzis did identify Developing Others as a threshold competency and its inclusion as an H-competency is based on Schroder's assertion that

"It was included because of its significance in more complex organisations where developing people is essential for allocating responsibility downwards and for utilising modern information technology in management." (Schroder, 1989, p70)

The eleven high performing competencies identified by Schroder are summarised in Figure 2.6. The fact that seven of these are cross-validated by at least two studies gives a measure of support to this list. However, it is weakened by the inclusion of the three competencies only identified by Boyatzis and the competency of Developmental Orientation, which is elevated to the status of 'High Performance' competency on an assertion even though that assertion is plausible.

The Cognitive Competencies
Information search
Concept formation
Conceptual flexibility
The Motivating Competencies
Interpersonal search
Managing interaction
Developmental orientation
The Directional Competencies
Self-confidence
Presentation
Impact
The Achieving Competencies
Proactive orientation
Achievement orientation.

Figure 2.6 Schroder's High Performing Competencies (Schroder, 1989 pp 81-82)

Another weakness of Schroder's model lies in his choice of the three research studies that he used for comparison purposes. As discussed earlier, this resulted from his restriction of work performance measures to direct measures only. However, this does not guarantee validity. In the Florida Council study, schools were differentiated by student scores on tests of maths and communication. Higher performances are assumed to result from the superior competencies of the school principals. However, other factors will also affect student scores. For example, it is generally recognised that schools with an intake of more able pupils will tend to show better examination results. The school's location has a bearing on this issue and schools located in deprived areas tend to achieve lower examination results. It is questionable, therefore, whether examination results do directly reflect the competencies of school principals without being affected by other factors.

It would have been interesting to see if Schroder's research produced a different set of competencies if a wider range of previous studies had been analysed, perhaps by including studies using supervisor ratings as a measure of a manager's performance.

Notwithstanding the limitations of Schroder's model, it has received some validation from further research. Cockerill (1989) used Schroder's H-competencies in his research into the competencies of senior managers and how these related to their managerial performance. In view of the previous comments, it is interesting to note

that this research used ratings by more senior managers as one means of assessing work performance! A field setting was used to collect behavioural data from a sample of 30 top level executives in an international financial services group based in the UK that was experiencing rapid environmental change. Each executive was observed for two days to collect behavioural data. An interview with each executive following observation supplemented these data. Behavioural scales devised by Schroder (1989) were used to analyse the behavioural observation data and to rate each executive on the eleven H-competencies using a five point scale.

The managerial performance of each executive was assessed using the organisation's Performance Related Reward scheme and a ranking based on the organisational competence of the unit run by each executive. This was rated by three top executives not included in the sample. The three evaluating executives undertook the rating process independently of one another and were requested not to discuss the process or its outcome. The inter-rater reliability of the three evaluating executives was high.

Cockerill found a strong relationship between the eleven High Performance Managerial Competencies and organisational unit competence and concluded that his research cross-validated the work of Schroder and Boyatzis. Whilst it is true that the research did provide a measure of support for Schroder's model of competencies, it should be noted that the sample only involved thirty managers from one company. Further research effort would be needed to justify a wider acceptance of the model.

2.5 The development of competence in the U.K.

2.5.1 The MCI National Management Standards

In 1982, the publication of the Government White Paper, 'A New Training Initiative: A Programme for Action' provided the framework for the development of standards based on the concept of competence for vocational education and training. The Manpower Services Commission (later to become the Training Agency) established guidelines for how standards could be set and this was subsequently applied within the field of management development.

Two key reports published in 1987 identified the urgent need to improve the quality and quantity of management education and training in the UK. Charles Handy's report 'The Making of Managers' was produced for the National Economic Development Council, the Manpower Services Commission and the British Institute of Management. It compared the way managers were trained and developed in different countries. He concluded that *"in Britain, management education and training is too little, too late for too few"* (Handy et al, 1988, p168).

The second report entitled 'The Making of British Managers', researched by John Constable and Roger McCormick, was commissioned by the Department of Education and Science and the Department of Trade and Industry and undertaken under the auspices of the British Institute of Management and the Confederation of British Industry. It made recommendations about how the provision of management training and development might be changed and improved in the future.

Both reports identified the limited amount of training that British managers received, especially when compared with our international competitors.

As a response to these reports, the Council for Management Education and Development (CMED) was formed and included representatives from industry, academia and government. This later became the National Forum for Management Education and Development. The operating arm of CMED was the Management Charter Initiative (MCI) formed in 1988 with the aim:

"to promote high standards of modern management practice and business skill among all organisations in both public and private sectors...and to develop a widely acceptable inventory of the main competences required by a well-rounded middle manager and also those needed in a first-level manager/supervisor"

(Day, 1988, p30).

A more specific objective was to *"increase the quantity and quality of management development and to make it more relevant and accessible".* *(Ibid.)*

The 'Management Competences Project' was funded by the Training Agency to progress the competence approach in the field of management. Its purpose was to develop a set of generic competences and standards, relevant to different levels of management (Jacobs, 1989).

The research involved a survey of over 4000 managers in a variety of types of organisation. The approach used was functional analysis. This methodology involves identifying the key purpose of managers and then breaking this down into the primary functions that need to be carried out in order for the key purpose to be achieved (Jessup, 1991). The primary functions are further subdivided into sub-functions, which are in turn further subdivided and so on. The initial findings were then discussed in focus groups and workshop events. In 1990 the Project published its Occupational Standards for Managers at the first level (M1). These were piloted at six centres across the country before being launched nationally. Standards for supervisory managers (M1(S)), middle managers (M2) and senior managers (M3) followed.

It is argued that the functional approach provides a broader conception of competence than task analysis approaches (Jessup, 1991). The approach has been criticised by those who argue that the management job cannot be reduced to a simple set of statements (Holmes, 1990; Burgoyne, 1993). However, the focus on function does shift the focus of competence away from tasks and procedures to the purpose and outcomes of work activity.

The Standards at supervisory, first line and middle management levels are based on the premise that the key purpose of the manager is to achieve the objectives of the organisation and to continually improve its performance. This necessitates the carrying out of the four key roles of managing operations, managing finance, managing people and managing information. These four roles are broken down into a number of units of competence which are then further subdivided into elements of competence. Each element has its own set of performance criteria and range indicators. The units and elements for the M1 and M2 Standards are included in Appendix 1.

Thus the MCI National Management Standards are written in terms of the outcomes that are expected from effective managers. The definition of competence was:

"The ability to perform whole work roles to nationally agreed standards in work situations". *(Whitear, 1995, p265)*

Thus this definition focuses on the achievement of outcomes at work in contrast to the behavioural definitions discussed in paragraph 2.3.

2.5.2 The emergence of behavioural models of competence in the UK

The emphasis in the MCI approach is on the measurement of outcomes and this is reflected in the deliberate use of the words competence and competences as opposed to competency and competencies as used in behavioural models. However, the MCI also developed a personal competence framework (i.e. a behavioural model) to identify the underlying personal qualities, skills and attributes which are associated with effective management behaviour (MCI, 1992). The Personal Competence Model is presented as four clusters that are further subdivided into thirteen dimensions. Each dimension is then specified through a series of behaviour indicators. A diagram of the clusters and dimensions is shown in Appendix 2.

It is the personal competences of the MCI model that are similar to the competencies of the Boyatzis, Spencer and Spencer and Schroder models in the USA.

However, despite strong Government support for the MCI National Standards for managers, many organisations are developing their own company-specific frameworks of competence. According to a survey of ninety one organisations by Matthewman (1994)

"there is strong evidence that whilst NVQ and MCI occupational standards (competences) are being introduced for front-line operational staff, behavioural frameworks (competencies) are favoured for managerial and specialist, professional groups". *(Matthewman, 1994, p21)*

The survey found that at management level, behavioural competencies are being used to create new corporate cultures focused on performance, change and adaptability. Over half the organisations in the survey favoured a framework based on identifying the behaviours or traits of high achievers and the qualities desired for business success as opposed to the occupational standards route used by NVQs/MCI qualifications.

A model of forty competencies has been developed by Dulewicz (1992,1994) following his work with assessment centres in the UK and is detailed in Appendix 3. This model was used in a longitudinal study of one hundred managers who attended the General Management Course at Henley Management College (Dulewicz and Herbert, 1992,1999).

Saville and Holdsworth (1996) developed a behavioural model of sixteen management competencies. Development of this model was motivated by the need to improve on approaches to validation research. Internal research on the validity of SHL tests and questionnaires, especially in the management area, had confirmed a number of difficulties associated with validation studies. Particular weaknesses in criterion measures such as leniency and halo effects continued to cause problems. These concerns were reflected in other studies (e.g. Robertson and Kinder, 1993). One approach to overcoming the 'criterion problem' was considered to be the use of behaviourally anchored rating scales.

At the same time, SHL's work on management competency models developed for different clients through both job analysis and in the design of assessment centres suggested a common core of fifteen competencies. These core competencies were redefined to take account of the wider competency literature and the competency of Commitment to Standards added in recognition of the importance of quality. The initial model was tested on over 900 managers in one client organisation and the resulting data subjected to correlation and factor analysis to investigate the underlying structure of the model. A revised version was then used over a three-year period with a range of clients. A further study involving over 1000 managers at different levels and from a range of different organisations led to the final version, which includes sixteen competencies, as shown in Appendix 4. The sixteen

competencies are grouped under the four key areas of Managerial, Professional, Entrepreneurial and Personal Qualities.

No doubt because of their many years developing questionnaires to identify psychological profiles, Saville and Holdsworth emphasise the underlying psychological aspects of competencies, commenting as follows.

"The key to an understanding of competency is to recognise that there are underlying personal characteristics or psychological constructs which are expressed in observable behaviour and action. In this, they resemble personality, ability, motivation or knowledge characteristics, all of which are, similarly, expressed in behavioural terms." *(Saville and Holdsworth, 1996, p2)*

Attempts to categorise the various descriptions of competence have been made. Procter (1991) suggested that the various approaches fall into three categories as shown in Figure 2.7.

Input models	**Process models**	**Outcome models**
Individual: knowledge, skills, personal attributes, motivation.	Individual behaviours: tasks and procedures, contributions to group actions.	Achievements.
i.e. What the person brings to the job.	i.e. Processes used in the course of the job.	i.e. Results achieved in the job.

Figure 2.7 Three categories for models of competence (Proctor, 1991)

Input models describe competence as what it is that competent people bring to the job. Competence is described as a combination of personal characteristics such as intellectual ability (intelligence, creativity etc), social abilities, emotional stability (including confidence, motivation) and physical dexterity.

Process models describe the way competent people behave. They focus on individual behaviours rather than the result and may be described as skills or abilities.

Outcome models describe competence by focusing on what it is that competent people achieve. Competence descriptions are the result of a functional analysis that breaks down an occupation or an organisational role into its constituent functions. Thus each element of competence is described in terms of an outcome which a competent individual might be expected to achieve in order that the key purpose of the organisational function is achieved.

In a working paper from Henley Management College, Finn (1993) has further synthesised the various approaches into a two-dimensional Transformational Competence Model as shown in Figure 2.8.

Model / Developmental Stage	Input	Process	Outcome
Entry Level	Appropriate Technical Knowledge	Extravert with Problem Solving	Ability to Initiate Change
Basic Level	Evidence of the Application of the Knowledge	Organising and Impact Skills with Inter-personal Sensitivity	Create, Agree and Implement Plans for Change
High Level	Evaluation and Development of Applied Knowledge	Developmental Orientation and Decisiveness	Create, Maintain and Enhance Effective Working Relationships

Figure 2.8 The Transformational Competence Model (Finn R, 1993, p29)

However, whilst these categories are of some help in explaining the different models, it does not sufficiently discriminate between the different approaches. For example, the model used by Boyatzis describes competencies as both characteristics as described by 'input' models and skills as described by 'process' models. Further work needs to be carried out in this area.

2.6 Summary analysis of competence

2.6.1 Key themes from research on models of competence

The major significance of the studies into managerial competence is the linking of personal qualities and characteristics with work performance. The attempt to identify individual characteristics that were causally related to effective and/or superior performance at work was a major step forward in thinking compared with earlier studies. It also necessitated developments in research methodology. Earlier research such as that of Carlson (1951) and Stewart (1967) simply analysed the nature of the managerial job itself through diary studies. Other studies such as Sayles (1964) and Mintzberg (1973) used observational methods to try and understand the nature of managerial work better and thereby infer the skills needed to perform it. With competency research, it was necessary to use a combination of methods to identify both what constituted effective/superior work performance and the characteristics that led to such performance.

Furthermore, the whole concept of competency is more broadly described in that it includes motives, traits, self-concept, skills and knowledge. Mintzberg derived a list of functional skills but these tended to be defined in functional terms such as 'leadership skills'. But what does an effective leader do compared with an average leader? How would you recognise the difference? Burgoyne and Stuart (1976) identified a theoretical model in terms of 'what it is within the person' that leads to effective managerial behaviour. This did include personal characteristics such as proactivity, mental agility and creativity in addition to individual skills. However, the description of skills in terms such as 'problem solving' and 'social skills' was both functional and too broad to enable the relevant behaviours to be identified. Furthermore, the model was only tested on a small sample of managers from one company.

Each of the earlier studies referred to above were valuable steps in understanding the nature of managerial work. However, it was the landmark work of Boyatzis (1982) that caused the significant shift in approach to research in this field (although it was McClelland (1973) who first introduced the notion of competency). His model of

management competencies was put forward as a basis for further research and it did significantly influence later studies.

It is the behavioural nature of competencies that provides the key to the power of the approach. They provide a frame of reference against which the behaviour of individual managers can be observed and identified for assessment and development purposes. To facilitate such assessment, Schroder (1989) developed a list of behavioural indicators related to effective performance in a job. These included positive indicators – behaviours that an effective manager would be expected to demonstrate – and negative indicators – behaviours that would be avoided. Spencer and Spencer (1993) developed a more useful set of scales that describe behaviours progressing from the poor performer to the superior performer. Thus managers can be rated against each competency to build up an overall profile. An example of the rating scale for Information Seeking from Spencer and Spencer is given in Appendix 5.

Saville and Holdsworth took this a stage further and developed a questionnaire that uses behaviourally anchored rating scales to enable assessments of managers' competencies to be made. Called the Inventory of Management Competencies, the design allows for both a self-rating by a manager and ratings by others including his/her boss, peers and subordinates. The result of each rating is a score from one to ten for each of the sixteen competencies.

It is important, however, that such generalised tests are not used too mechanistically. As in any general model, the relative importance of each competency needs to be assessed for different managerial positions. A low score on a competency that is not needed for a particular managerial job may not be significant. An average score for a competency that is critical for the effective performance of a particular job will be of rather more concern.

2.6.2 Competency and the Completion of Management Courses

Could management competencies be used to identify differences between managers who are successful on management courses compared with those who are not?

The link between job performance and competencies has been supported by several studies. Cockerill (1989) showed that there was a strong relationship between Schroder's High Performing Competencies and managers' performance at work in a large financial services company (see paragraph 2.4.3). In their longitudinal study over a seven year period (see paragraph 2.5.1), Dulewicz and Herbert (1992, 1999) showed that certain competencies were significantly related with the rate of career advancement of the seventy two managers in the sample. These were the four competencies and two supra-competencies of risk-taking, planning, motivating others, persuasive, planning and organising and assertive and decisive. Nyfield et al. (1995) found positive correlations at the 1% level between the five competencies of innovative, supportive, organised, persuasive and resilient and overall job performance of managers in the UK, the USA and Turkey.

Studies exploring the relationship between competencies and performance seem to have had more success than those testing the link between personality factors and work performance.

"Over the past 25 years, a number of researchers have investigated the validity of personality measures for personnel selection purposes. The overall conclusion from these studies is that the validity of personality as a predictor of job performance is quite low." *(Barrick and Mount, 1991, p1)*

However, Barrick and Mount argued that one of the reasons for this was that there was no well-accepted taxonomy for classifying personality traits. There has now emerged a general agreement within the trait views of personality that the so-called 'Big Five' personality factors represent an adequate way of describing the basic dimensions of personality (Arnold et al, 1998; DuBrin, 1994), these five dimensions being as follows.

1. Extroversion – introversion.
2. Neuroticism (i.e. emotional instability, anxiety).
3. Conscientiousness.
4. Agreeableness.

5. Openness to experience.

Barrick and Mount (1991) therefore conducted a meta-analysis to investigate the relation of the Big Five personality dimensions to the three job performance criteria of job proficiency, training proficiency and personnel data. This covered 117 studies producing a total sample of 23,994 people covering the five occupational groupings of professionals, police, managers, sales and skilled/semi-skilled workers. Job performance measures were mainly (85%) based on performance ratings, training proficiency mainly on training performance ratings whilst the personnel data included data from employee files such as salary level, turnover, status change and tenure.

Barrick and Mount found that the personality dimension of Conscientiousness was a consistently valid predictor for all three job performance criteria and across all occupational groups. Thus this aspect of personality appears to utilise traits which are important to the achievement of work tasks in all jobs. That is,

"those individuals who exhibit traits associated with a strong sense of purpose, obligation and persistence generally perform better than those who do not."

(Barrick and Mount, 1991)

Extroversion was also found to be a valid predictor for managers and sales people. Openness to Experience and Extraversion were valid predictors for the training proficiency criterion across all occupations.

Tett et al. (1991), in another meta-analysis study, supported the findings of Barrick and Mount and concluded that their findings, in conjunction with other studies, demonstrated the link between personality factors and job performance.

In the UK, the Dulewicz and Herbert study (op. cit.) did not find any statistically significant relationships between personality factors and rate of advancement. The personality factors were measured by the Occupational Personality Questionnaire (OPQ). There was, however, a significant relationship at the 5% level between seniority and the four OPQ factors of Persuasive, Outgoing, Affiliative and

Confident. Furthermore, the two personality factors of Controlling and Competitive correlated significantly at the 5% level with the group of high-fliers (those who reached senior management positions most rapidly). However, Dulewicz and Herbert concluded that the competencies predicted rate of advancement more effectively than did the OPQ, perhaps because the competencies were more performance related.

Nyfield et al. (1995), in a study to explore the cross-cultural validity of management assessment methods, tested for correlations between various personality factors, competencies and overall job proficiency. The sample included 1043 managers from a wide range of functional areas across industry sectors from the UK, USA and Turkey. The psychometric instruments used were tests of verbal and numerical reasoning, the Occupational Personality Questionnaire and a research version of the Inventory of Management Competences (Saville and Holdsworth, 1996). The study did not find any significant correlations between OPQ personality factors and the overall job proficiency of managers as rated by their supervisors. However, they did find significant relationships between certain personality factors and competencies of managers in the sample (competencies as rated by their supervisors).

According to Nyfield et al., the results of their study showed that personality variables can be good predictors of work competencies. This result is unsurprising in view of the fact that competency is defined as including personality characteristics (see paragraph 2.5.2). However, it does appear that, although personality factors do form part of a person's overall competency, the broader make-up of competencies includes other characteristics necessary for superior work performance. Thus, personality factors are less useful as direct predictors of work performance but have an indirect effect through their link with competencies.

Boyatzis argued that because job competencies are underlying characteristics, they can be said to be generic and therefore apparent in many forms of behaviour or a wide variety of different actions. For example, a manager who scores highly on a management competency associated with the achievement of results (e.g. Spencer and Spencer's 'Achievement Orientation' or Boyatzis' 'Efficiency Orientation')

might be expected to apply this competency when working through a management development programme.

Furthermore, both Boyatzis and Schroder emphasised the influence that the environment has on a manager's performance in a business organisation. Similarly environmental issues, such as the degree of flexibility in a course, can be expected to have an influence on participants on management programmes.

"Organisational effectiveness is neither the sole outcome of the characteristics of managers nor of the characteristics of the internal and external environment of the organisation. It is an interaction between these two." *(Schroder, 1989, p6).*

For a management course, this could be translated as a participant's performance is not just a result of his/her personal characteristics but is an interaction between these characteristics and the environment of the course.

Interestingly, Schroder goes on to say:

"Cognitive/personality-based managerial characteristics will always have the least effect in highly structured, stable or controlled situations... ... . That personal characteristics have more influence, and are best measured in unstructured situations has been recognised since the advent of projective tests." *(Ibid, p7)*

This suggests that personal competencies will be of more significance in the less structured NVQ programme than in other taught courses like the DMS, which have a laid down structure for attendance and assessments.

Thus the hypothesis that those successful on NVQ programmes in management are likely to score more highly on certain management competencies is supported by a number of other studies. The specific competencies in question are discussed further in Chapter 3.

2.6.3 Choice of research instrument for competencies

For this research programme, an instrument was needed to assess the managerial competencies of course participants. As discussed earlier, competencies have been shown to be more reliable predictors of performance than personality factors, although underlying personality constructs represent an important element of competencies. Consequently, psychological questionnaires such as the 16PF and OPQ were ruled out. In view of the numbers involved and the wide distribution of participants in the study across many organisations, the instrument needed to be one that could be completed by respondents without the researcher present. A further desirable criterion was for the instrument to be capable of being completed by both the participants and their line managers. This would help to reduce any bias introduced by self-ratings alone.

A further desirable criterion was for the instrument to be based on behaviourally anchored scales rather than direct ratings of individual competencies. This helps to reduce the tendency to more favourably rate one's own competencies.

Consideration of these criteria led to the choice of the Saville and Holdsworth Inventory of Management Competencies (IMC) as the instrument to be used to assess the competencies of course participants. A key advantage of the IMC is that it is based on behaviourally anchored scales. It is composed of 160 behavioural statements arranged into 40 blocks of 4 items each (see Appendix 6 for a sample of behavioural statements used). Working a block at a time, respondents are first asked to rate the managerial performance of the course participant (i.e. self or manager rating) against each of the four behaviours in terms of their frequency. Respondents are then asked to consider the four behaviours together and indicate which one is most true and which is least true. These two sets of responses are analysed separately and yield two profiles (normative and ipsative) based on the sixteen IMC competencies grouped under the four main headings of Managerial, Professional, Entrepreneurial and Personal Qualities. There are ten statements for each of the sixteen competencies.

The normative scale is based on the ratings given on the frequency scale for each behavioural statement. These are analysed in relation to a norm group of managers. The ipsative profile gives the relative strengths profile of the manager resulting from cumulating and norming the forced-choice (most/least) responses.

The IMC is a general model of competencies that is not specific to any particular management job. This was important in view of the varied nature of the work of course participants. The instrument was also capable of being given to course participants for self-rating and to their managers for an alternative rating. This represented an additional advantage in that it would help reduce the effect of bias – either on the part of the course participant or their manager.

2.7 Learning and development

The National Management Standards and NVQ courses in management were part of the response to the findings that British managers were under-educated and under-qualified as identified in the reports of Handy and McCormick discussed in paragraph 2.5.1. However the nature of NVQ courses and the underlying approach to learning is fundamentally different from traditional taught courses. It is worth reviewing, therefore, the ways in which people learn in general and the application to management learning in particular.

2.7.1 A definition of learning

An immense amount of work has been put into the study of learning and the process of learning since the late 1800s. In a review of major contributors to the field, Knowles (1990) lists 61 major propounders of learning theories and 33 major interpreters of theories over the period 1885 to 1986. This has led to a variety of definitions of learning and also the emergence of different schools of thought on learning theories.

Robertson and Cooper (1983) suggest that, regardless of their perspective, most psychologists would accept a definition of learning in these terms:

" a relatively permanent change in the potential to behave, gained as a result of experience." *(Robertson and Cooper, 1983, p182)*

An important element of this definition is in the reference to *potential* to behave. The distinction is made between learning and performance or behaviour. Learning may take place but may not result in a change in performance because of the influence of other factors. For example, a student may prepare thoroughly for an examination but his/her performance may be poor because of the stress and nervous tension that he/she experiences whilst actually taking the examination. Thus, although a person's behaviour generally provides a good indication of the learning that has taken place, the influence of other factors such as anxiety or a lack of motivation can mean that learning is not always reflected in behaviour.

Knowles quoted Harris and Schwahn as distinguishing between:

1. *Learning as a product, which emphasises the end result or outcome of the learning experience.*
2. *Learning as a process, which emphasises what happens during the course of a learning experience in attaining a given learning product or outcome.*
3. *Learning as a function, which emphasises certain critical aspects of learning, such as motivation, retention and transfer which presumably make behavioural changes in human learning possible.*

(Harris and Schwahn (1961) in Knowles, 1990, p6)

For the purposes of this research, we are more concerned with the second and third of these since the aim is to understand better the influences on the learning process that result in satisfactory outcomes. However, functional aspects such as motivation to learn will also have a significant effect on participants' responses to the process that they experience.

2.7.2 Learning theories

Different theories of learning have been influenced by the different schools of thought in psychology. For example, in its extreme form, the behaviourist approach to psychology viewed the individual as a 'black box'. It was concerned only with observable behaviour and the conditions or situations that lead to particular behaviours. This view underpins the behaviourist or connectionist theories of learning which attributes learning to the association or connection between stimulus and response. Pavlov's experiments with dogs is the most famous study in the classical conditioning school. However, Skinner argued that the more complex human behaviours could not be explained by classical conditioning alone. He felt that most human behaviour affects, or operates on, the environment. This is the concept of operant conditioning which is described by Luthans (1989) as follows.

"Operant conditioning is concerned primarily with learning that occurs as a consequence of behaviour. It is not concerned with eliciting causes of behaviour as classical or respondent conditioning is." *(Luthans, 1989, p294)*

In classical conditioning, a change in the stimulus will elicit a particular response. For example, if one is tapped below the kneecap, the lower leg will flex. In operant conditioning, the strength and frequency of behaviours are determined mainly by the consequences that follow that behaviour.

More recent approaches to learning have focussed on the cognitive processes that are involved. Behaviourism explained learning as a trial and error process, in which behaviour was strengthened or weakened by the direct effects of the environment. Although a behaviourist theory, social learning theory goes beyond conditioning and recognises that key cognitive processes such as expectancies about what might happen and the capacity of individuals to learn without direct experience, have an important role to play (Arnold et al, 1998; Luthans, 1989).

There has been significant research carried out on students' approach to learning. Marton and Saljo (1976) in Gothenburg found a clear distinction between different students in the way they analysed academic articles. Some adopted a deep approach to learning. They sought to understand the meaning of the article, questioned the author's arguments and related them both to previous knowledge and to personal experience. Others had a more surface approach. Their intent was to memorise those parts of the article that they considered to be important in view of the types of questions they anticipated afterwards. Their focus was on specific facts or pieces of disconnected information which were rote learned. This research was replicated by Entwistle et al. (1979) at the University of Lancaster.

Pask and Scott (1972) identified two main strategies that students adopted when learning, these being the serialist and the holistic. The serialists used a step by step approach to learning. They tended to put more emphasis on separate topics and the logical sequence connecting them. The holistics, on the other hand, tried to build up an overall picture as a guide to learning right from the start and to see where the detail fitted in later on.

However, both of these studies focussed on how students learned in more traditional academic learning situations. Although it demonstrated that people do learn differently, the learning situation was rather different from the more work-based

learning that takes place on the NVQ programme. Burgoyne (1975) at the Centre for the Study of Management Learning at the University of Lancaster focussed more on the issue of how managers learn. He identified seven schools of thought in his review of learning theories and their relevance to management learning as follows:

1. Conditioning, Connectionist.
2. Trait modification.
3. Information theory
   - transfer
   - cybernetic.
4. Cognitive.
5. Experiential.
6. Social influence.
7. Pragmatic.

These have been condensed to three general categories (Binsted, 1988) as follows:

Conditioning: theories based on a stimulus/response view of learning; practice, feedback and reinforcement are the appropriate learning principles.

Cognitive: theories based on the view that the experienced learner builds up complex maps of the world, integrating new concepts into this schema. This school of thought is suitable for managers who already have experience and need to integrate new learning into their work. Learning tends to be in areas where there is no one right answer.

Experiential: this school embodies the principles of holistic learning and learner autonomy and choice. Learning is a natural rather than a taught activity and the learner is given as many choices as possible, together with control over the pace of learning.

Wills (1993), following research amongst practising tutors at Ashridge Management College, described a general shift in emphasis towards 'experiential learning'. Using this term in, perhaps, a more specific sense he comments:

"Instead of passively accepting an inert, traditionally-based learner-role, managers are reportedly becoming more inclined to demand learning situations which are thoughtfully built around active experience. Perhaps this is due in part to the fact that, as well as giving them greater confidence to successfully apply the learning beyond the duration of the course, learning by 'doing' appears to directly concur with a manager's every day reality of the nature of management itself".

(Wills, 1993, p5)

This form of learning is very relevant to the NVQ programme in management, which is the subject of this study. Whilst there are opportunities for classroom based learning, a key part of the philosophy of the programme is to enable participants to learn from their experience of applying the Management Standards. It is worth, therefore elaborating on the theory of experiential learning. One of the major contributors to this approach is Carl Rogers, cited in Knowles (1990), who expands on the concept as follows.

Let me define a bit more precisely the elements which are involved in such significant or experiential learning. It has a quality of personal involvement – the whole person in both his feeling and cognitive aspects being in the learning event. It is self-initiated. Even when the impetus or stimulus comes from the outside, the sense of discovery, of reaching out, of grasping and comprehending, comes from within. It is pervasive. It makes a difference in the behaviour, attitudes, perhaps even the personality of the learner. It is evaluated by the learner. He knows whether it is meeting his need, whether it leads toward what he wants to know, whether it illuminates the dark area of ignorance he is experiencing. The locus of evaluation, we might say, resides definitely in the learner. Its essence is meaning. When such learning takes place, the element of meaning to the learner is built into the whole experience. *(Rogers, 1969, cited in Knowles, 1990, p8)*

In the NVQ programme, participants compare their own performance and way of working with the National Management Standards. Thus participants evaluate for themselves what they need to learn and how they need to change in order to meet the requirements of the Standards. Learning is self-initiated, they are involved and the

learning comes as a result of an identified need. Thus the above explanation by Rogers matches closely with the learning principles on the NVQ programme.

Wills (1993) sought to establish a framework for management learning. He conducted 12 semi-structured interviews focusing on learning and programme design with tutors across a broad range of subject disciplines. Though only a small sample, the study provides a useful link between general theories of learning and tutors on management programmes in the UK. He identified three broad categories of learning:

Type 1 - Cerebral Learning: when learning occurs as a direct consequence of absorbing factual information or knowledge which has an immediate relevance but does not have any long-term effect on a managers view of the world or personal identity in general. An example is when a manager absorbs information about how to read and understand balance sheets.

Type 2 - Behavioural Learning: when learning occurs as a result of building upon the absorption of factual information or knowledge to the degree whereby behaviour changes and becomes transferable from the learning situation to the work situation. An example is the learning of interviewing skills that are absorbed and result in situation-specific behaviour changes, but do not impinge upon a manager's genuine personal identity.

Type 3 - Transformational Learning: learning occurs when managers become conscious of their conceptions of the world in general, how they are formed, how they might change them and ultimately become aware of the effects these changes may have upon personal identity or development of self. This kind of learning is not situation specific. An example is where a manager is able to effect real personal change, such as an improvement in confidence, when dealing with important customers and others.

These three types of learning may all be reflected in management course programmes in general and NVQ programmes in particular. Cerebral learning will be more evident in knowledge-based subjects such as Finance and Statistics where

participants are learning about particular techniques. Behavioural learning will be more evident in subjects involving inter-personal skills such as interviewing, making presentations and negotiating. According to Wills, transformational learning is comparatively rare but may occur as a result of self-development activities.

The categories suggested by Wills describe three types of learning. Salaman and Butler commented on a common, but perhaps somewhat cynical view of the process by which managers learn as follows.

"The conventional assumption is that managers learn best through doing, through experience, whenever possible; when the subject matter is highly theoretical or knowledge-based it must be built around worked examples, case-studies, project work. Most of all, it is assumed that managers will only learn when the subject has obvious and immediate practical application: the words 'theory', 'academic', 'model' are usually seen as negative, even pejorative. What is valued is certainty, tied to prescription." *(Salaman and Butler, 1990, p185)*

This view is similar to that criticised by Miller and Money (1990) as applying to some newer MBA programmes (see paragraph 1.5). Salaman and Butler go on to reject the basic tenets behind these assumptions although recognising that this may be what managers want. They argue that this view of learning only applies to managers learning as managers. It would not apply to managers attending a course or conference in their specialist discipline of, for example, engineering, personnel or production. Furthermore, as university students, managers presumably learnt in the conventional academic manner. Why, then, should they reject these methods simply because they have become a manager?

A review of Knowles' work on adult learners helps us to understand some of the principles underlying the process of learning applicable to managers. In his book "The Adult Learner: a neglected species" (1990) he analyses various theories of learning and proposes a theory of adult learning based on the following assumptions.

1 **The need to know.** Adults need to know why they need to learn something before undertaking to learn it.

2 **The learner's self-concept.** Adults have a self-concept of being responsible for their own decisions, for their own lives. They need to be seen by others and treated by others as capable of self-direction. Therefore, the role of the teacher is to engage in a process of mutual inquiry with them rather than to transmit his or her knowledge to them and then evaluate their conformity to it.

3 **The role of the learner's experience.** For many kinds of learning the richest resources for learning reside in the adult learners themselves. Hence the greater emphasis in adult education on experiential techniques - techniques that tap into the experience of the learners.

4 **Readiness to learn.** Adults become ready to learn those things they need to know and be able to do in order to cope effectively with their real-life situations.

5 **Orientation to learning.** Adults are life-centered in their orientation to learning. Therefore, the appropriate units for organising adult learning are problems they will confront in life situations, not subjects.

6 **Motivation.** While adults are responsive to some external motivators (promotions. higher salaries etc) the most potent motivators are internal pressures (job satisfaction, self-esteem etc). Research shows that all normal adults are motivated to keep growing and developing, but that this motivation is frequently blocked by such barriers as negative self-concept as a student, time constraints and inaccessibility of opportunities:

One can see that most of these principles could be construed as supporting the quotation from Salaman and Butler above. Item 1 is concerned with managers (as adults) understanding why they need to know something. Item 3 emphasises the value of experiential techniques. Items 4 and 5 are concerned with the practical application of knowing those things in terms of how the knowledge can be used in the workplace. To some extent, the motivational aspect of item 6 may also be stronger when managers see the benefits in terms of application of learning.

However, Salaman and Butler's quotation epitomises a narrow interpretation of Knowles' principles. If managers understand why they need to learn about a topic, it may not need to have an immediate practical application. A manager who is keen to progress in his/her career may be motivated to develop on a broader front in order to improve the chances of promotion.

Interestingly, Knowles comments that these principles separate adult education from 'conventional' education rather than adults from young people and implies that young people might also learn better when these principles are applied. In the later editions of his book (Knowles, 1990), he discusses the shift from pedagogy to androgogy rather than the pedagogy versus androgogy model that he referred to in earlier editions.

2.7.3 Individual differences and learning styles

Kolb (1991) presents a very similar set of principles for learning to Knowles. He identifies five characteristics of the learning environment that are most responsive to the needs of adult learners as follows.

1. **A psychological contract of reciprocity.**
   Learning should not be passive but should involve the learner both giving and receiving.

2. **Experience based.**
   The motivation for learning comes from problems and opportunities arising from the learner's own life experience.

3. **An emphasis on personal application.**
   The main goal of learning is the application of new knowledge, skills and attitudes to the solution of the individual's practical problems.

4. **Individualised and self-directed.**
   Just as every individual's experience is different, so are each person's learning goals and learning style.

5. **An integration of learning and living.**

   In addition to learning about the subject matter, adults need to learn about their own strengths and weaknesses as a learner, to understand their own learning style.

A key theme of Kolb's work is that, notwithstanding the general principles of adult learning, managers have individual learning styles that cause them to learn in different ways.

"Today's highly successful manager or administrator is distinguished not so much by any single set of knowledge or skills but by his ability to adapt to and master the changing demands of his job and career - by his ability to learn". (Kolb, 1976, p21)

Thus people learn in different ways according to their own internal characteristics and attributes. There have been differences in view over this issue.

The relative influence of person and situation variables has been a topic of some controversy. Some people have argued very strongly for the predominance of situational influences, suggesting that stable individual differences in psychological make-up have a relatively small role to play. Despite these historical differences of opinion, it is clear that modern psychology allows for the influence of both person and situation variables. (Arnold et al, 1998, p119)

Much work has been done to try and identify underlying personality traits that could explain human behaviour in a variety of different situations. It has been shown in paragraph 2.6.2 that personality factors can influence job performance. For example, Conscientiousness relates to job performance for many different occupations and Extroversion has been associated with success for managers and sales representatives (Barrick and Mount, 1991). The influence of personality factors on learning is less clear although Barrick and Mount did find that Openness to Experience was a valid predictor of training proficiency.

Of more relevance is the work on learning styles carried out by Noe (1986), Kolb (1991) and Honey and Mumford (1992). The importance of learning styles is noted

by Porteous and, significantly, he comments on learning style as being a factor in dropout from learning programmes.

People learn differently and some consideration may be needed for this. Some are predominantly experiential learners and benefit most through doing things as a first step. Others prefer to read or hear about the task and dissect it in their imagination; they would be more abstract/verbal learners. In the learning situation, some people are very dependent types who require detailed coaching and feedback, whereas others much prefer to have minimum guidance and more time on their own. In most training programmes, there will be a mixing of teaching modes which will accommodate everyone to some extent. But it may be one cause of dropping out from training programmes that the mode of delivery did not suit an individual's learning style. *(Porteous, 1997, p96)*

Pask and Scott (1972) also argued that there are important underlying differences in the way that people think and tackle problems. They described learning style as the general tendency to adopt a particular strategy of learning. Using their categories of holistic learners and serialist learners they conducted an experiment to investigate the effects of matching and mismatching learning materials with students' learning styles. The result was dramatic. The students in conditions where the learning materials matched their learning styles were able to answer most of the questions about what they had learned. Students in the group where the learning materials were mismatched with their learning styles generally fell below the halfway mark. Thus the implication for educators was that they needed to provide opportunities for students to learn in a way that suits their style of learning. Although this experiment involved learning in a more academic way, it does have implications for the NVQ programme by demonstrating the link between learning styles, the learning situation and the learning outcomes.

A more appropriate model of learning in management situations is that of Kolb (1991). He considered that managers learned through a problem solving process and illustrated in his experiential four-stage model shown in figure 2.9.

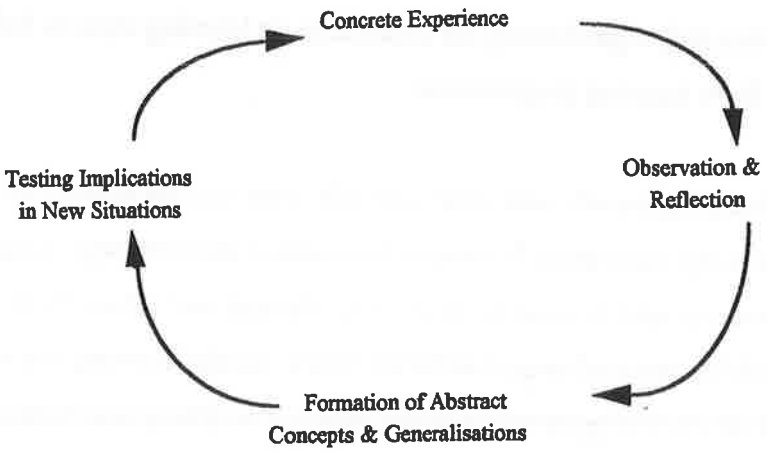

Figure 2.9 The Experiential Learning Model (Kolb, 1991, p59)

Based on this model he produced a Learning Styles Inventory (LSI) which enables an individual to identify their individual learning style. The LSI was tested on 800 practising managers and graduate students in management to obtain a norm for the management population. The four learning styles identified were:

The Converger	whose greatest strength lies in the practical application of ideas.
The Diverger	with strengths in imaginative ability.
The Assimilator	whose greatest strength is in the ability to create theoretical models.
The Accommodator	whose strength lies in doing things, in carrying out plans and experiments.

Kolb's research on learning styles showed that:

"managers on the whole are distinguished by very strong active experimentation skills and are very weak on reflective observation skills. Business school faculty members usually have the reverse profile. To bridge this gap in learning styles the management educator must somehow respond to pragmatic demands for relevance and the application of knowledge while encouraging the reflective examination of experience that is necessary to refine old theories and to build new ones".

(Kolb,1991, p67)

In the U. K., Honey and Mumford (1992) have built on the work of Kolb and published The Manual of Learning Styles. They identified four learning styles which are based on a similar model to Kolb's:

The Activists	enjoy the here and now and are dominated by immediate experiences.
The Reflectors	like to stand back and ponder on experiences and observe them from different perspectives.
The Theorists	are keen on basic assumptions, principles, theories, models and systems thinking.
The Pragmatists	positively search out new ideas and take the first opportunity to experiment with applications.

A key finding from their work is that people learn better from activities that relate to their dominant learning style. Hence activists learn less from formal lectures and more from practical exercises and role plays. Reflectors, on the other hand, hate being thrust into the limelight by for example, being forced to take a leading part in a role play. They would actually learn more by observing others taking part in the action.

Honey and Mumford (1992) developed the Learning Styles Questionnaire to identify individual learning styles. According to their research, the type of activities congruent with each of the four learning styles are as summarised below.

Activists learn best from engaging in new experiences and problems where there is excitement and drama and least from activities that are passive and involve engaging in solitary work i.e. reading, writing or thinking on their own.

Reflectors learn best when they are allowed or encouraged to watch, think or ponder over activities or where they can carry out research such as investigating and assembling information and where they can reach a decision in their own time without pressure and tight deadlines. They learn least from activities where they are involved in situations that require action without planning or where they are given insufficient data.

Theorists learn best from activities where they have time to explore methodically the associations and interrelationships between ideas, events and situations and where they are in structured situations with a clear purpose. They learn least from activities where they are involved in unstructured activities where ambiguity and uncertainty are high.

Pragmatists learn best where there is an obvious link between the subject matter and a problem or opportunity on the job and they are given techniques currently applicable to their own job. They learn least where learning is not related to an immediate need they recognise or where the event seems distant from reality. They also learn least when they feel that they are going round in circles and not getting anywhere fast enough or where there are political, managerial or personal obstacles to implementation.

This is not to say that a person's learning style is fixed for all time. Honey and Mumford argue that, from a self development point of view, a person has the option of either concentrating on his/her preferred learning styles or to make a conscious effort to develop the aspects of their style that are 'weaknesses'. By the latter option he/she can become more flexible and learn more effectively from a greater variety of learning experiences (Honey, 1984).

2.7.4 The significance of attribution theory and locus of control

Both Knowles and Kolb refer to the importance in adult learning of self-direction. It is argued that adults have a self-concept of being responsible for their own decisions and that learning will be more effective if they can influence the learning process.

However, attribution theorists have suggested another set of variables as important mediators of individual differences. This is the concept of expectancy and the perceptions of one's ability and the difficulty of the task. Expectancy theory portrays motivation as resulting from the extent to which a person perceives that he/she can and wants to perform well and the extent to which he/she perceives that such performance will produce the desired outcomes. According to attribution theorists, it is not success or failure per se, but the 'causal attributions' made for either of these

outcomes that influence future success. For example, if people attribute success to a stable factor such as ability, then they should expect continued success. If, on the other hand, they attribute success to an unstable factor such as effort or good luck, they should be uncertain about future outcomes. Similarly, attributing failure to stable factors should produce expectations of continued failure, while attributing failure to unstable factors should not (Eccles, 1983). However, based on his work with management consultants, Argyris observed that even well-educated, high-powered professionals reacted defensively to protect themselves and resorted to making attributions about the behaviour of clients or managers when they perceived themselves as subject to possible criticism (Argyris, 1991).

Closely related to attribution theory is the work on locus of control. Rotter (1966) showed that people are different in their beliefs about the degree of control that they, as individuals, have. Some people believe that they are responsible for the rewards and punishments they receive. These are said to have an internal locus of control. Others blame what happens to them on luck, believing that their life situation is under the control of fate or other people. This group is said to have an external locus of control.

"Locus of control is an individual's generalised belief about internal (self-control) versus external control (control by the situation or by others)."

(Buchanan and Huczynski, 1997, p680)

Others have modified Rotter's original unidimensional internal-external (I-E) scale. For example, Levenson (1981) proposed the separation of the external dimension into two further dimensions to reflect the person's view of external control by chance (C scale) or by 'Powerful Others' (P scale).

O'Brien (1984) analysed 17 studies that examined the relationship between an employee's locus of control and job performance. The majority of these studies reported that internals performed better than externals and included two studies with owner/managers and two with business students. However, O'Brien cast some doubt on the overall findings since a significant number of studies showed no such correlation. He suggested that these studies showed that the degree of correlation is

less if one controls for other variables such as the abilities of internals and externals and the job structure in which they work. For example, Spector (1982) in another analysis of previous research showed that externals tended to perform better in more structured environments. Externals also tended to be more satisfied with directive supervision and to comply with the demands of more coercive supervisors than were internals. Tasks that require initiative and independent action are more suited for internals, who are in turn best supervised by participative supervisors.

According to Dubrin (1994), in general, internals perform better in technical professional and managerial jobs. For instance, a sales representative with an internal locus of control would feel personally responsible for making a quota even if general business conditions were poor. Externals tend to perform better when the work requires compliance and conformity and when pay is not tied to performance.

Eccles also refers to the concept of 'academic learned helplessness' to describe students who assume that they cannot control their failures. She notes that:

"Empirical evidence has demonstrated the important mediating role of locus of control and learned helplessness for achievement-related behaviours."

(Eccles, 1983, p88)

Thus the review of research on this topic suggests that locus of control is less likely to be a factor in the DMS taught course because the structure is defined. However, in the case of NVQ courses, there are more demands on participants to direct their own learning programme. Thus those with a more internal locus of control are more likely to be able to develop their own study and assessment schedule and stick to it. Those with a more external locus of control are more likely to be swayed by external events whether these are pressures from work or influences from within the course group and blame those influences for their inability to complete the programme.

2.8 Summary analysis of learning and learning styles

2.8.1 Key themes from previous research

The summation of research into learning shows that people do learn in different ways according to the nature of what they are learning, the purpose of that learning and their own individual learning style. Pask and Scott (1972), Marton and Saljo (1976) and Entwistle et al. (1979) all conducted research with University students and identified different categories of learning. Pask and Scott distinguished between holistic learners who tended to build up an overall picture as a guide to learning and serialists who adopted a step by step approach. Marton and Saljo and Entwistle et al. explored the concepts of deep learning and surface learning. However, this work was based on University students and related more to academic learning. Burgoyne (1975), Binsted (1988) and Wills (1993) focussed more on the types of learning relevant to managers and, in particular, the nature of cognitive or cerebral learning and experiential learning (Rogers, 1969). Experiential learning is often emphasised in relation to management learning (Wills, 1993) since managers have a tendency to prefer learning situations where they can see the relevance to their work (Salaman and Butler, 1990). Knowles proposed six key factors that influence the way adults learn. He emphasised that adult learning is more self-directed and affected by the person's need to learn, their motivation and their previous experience.

The fact that people learn differently and that learning is affected by the situation was argued by Arnold et al. (1998) and Noe (1986). Pask and Scott (1972) demonstrated this with students by testing their learning in situations where their learning style was matched and mismatched with the learning materials. There was a marked difference in the learning that took place in the two situations. However, it is the work of Kolb (1991) and Honey and Mumford (1992) on the learning styles of managers that is of particular interest and relevance in respect of participants on the NVQ programme since all the participants are practising managers. Kolb's portrayal of learning as a continuing cycle of learning from experience and problem solving fits well with the philosophy of the NVQ programme which incorporates both work-based and off-the-job learning. Honey and Mumford's research in the UK built on Kolb's model. Using slightly different descriptions of learning styles from Kolb,

they explored the types of learning activity that would match each learning style and also the kinds of learning activity that would provide a mismatch. Thus Honey and Mumford's findings are relevant to this research which seeks to examine whether learning style is a significant variable in the ability to complete the NVQ programme. Finally this section reviewed the theories of attribution and locus of control. These related concepts show how people are different in the ways in which they either accept responsibility for their own actions or tend to blame other people or fate. The theories have been applied to both work performance and academic situations. In the latter case they reflect the way that students describe the reasons for their failures on courses. Again this is particularly relevant to non-completion on NVQ courses. It shows how research studies based on soliciting lists of reasons why participants leave courses do not necessarily give a true picture. Thus this research seeks to explore the underlying characteristics of those who complete compared with those who do not in order to circumvent this issue.

2.8.2 Learning Styles and NVQ courses in management

When one considers Knowles' six principles for adult learning in relation to NVQ programmes it can be seen that the environment of NVQ courses in management in terms of their philosophy and structure more closely match the principles than do more traditional taught courses. A comparison may be made as follows.

1. **The need to know**
   The Management Standards are presented as statements of good working practice. Provided this is accepted by course participants, it is apparent that a demonstration of the ability to work to the Standards will be beneficial to the individual manager. In contrast, taught programmes such as the DMS often include material, the usefulness of which is not always immediately apparent.

2. **The learner's self concept**
   The NVQ programme initially allowed participants to determine their own learning and assessment programme by means of a learning contract which was agreed with their employer and the Business School. Thus they had full control over the length and intensity of the programme that they had followed.

Experience showed, however, that too much flexibility tended to be counter-productive because participants found it easy to delay their submission of assessments when subjected to other work pressures. However, even with some tighter control over assessment deadlines, the NVQ programme still allows a high degree of control by the participant over the order of work, items included for evidence etc.

Birchall and Pollack found a similar problem of too much flexibility adversely affecting completion rates.

"Henley's open distance learning MBA used to offer the learner significant freedom of choice which, for all but the truly independent learner, was found to be counter-productive to programme completion."

(Birchall and Pollack, 1992, p12)

The taught DMS programme however has a laid down timetable of lectures and assignment submission dates that must be adhered to. Participant choice is much more restricted.

3. **The role of the learner's experience**

   Assessment for the NVQ is based on an evaluation of the participant's experience on the job. Thus participants can select the experience that they believe to be most relevant. Where their current working practice does not match the Standards, they can use the Standards as a guide to gain new experiences from which they can learn. Whilst the DMS does use work based assignments, the opportunities for experiential learning is more limited.

4. **Readiness to learn**

   NVQ assessment is based on the evidence from day to day, real life situations. Learning opportunities are based on job related situations. There is less opportunity for work-based learning in taught courses that necessarily tend to use examples and case studies and require the participant to make the transfer of learning to the workplace.

5. **Orientation to learning**

   Again, as NVQ assessment is based on real work activities, the orientation is to the problems faced at work, which can then be related to the Standards. Taught courses tend to be organised into subjects such as Finance, Marketing etc., with the exception of a few integrating topics such as a work-based project or (as in the case of the Bournemouth University Business School) action learning components.

6. **Motivation**

   The motivation issue is rather more complex. Knowles suggests that internal pressures such as job satisfaction, self-esteem etc. are the most potent motivators. Certainly NVQ programmes can meet these needs through the satisfaction and improved confidence gained by the knowledge that one is performing to national standards. In some cases however, participants are nominated to NVQ programmes as part of an organisation's policy to accredit their managers. This can provoke strong negative feelings towards the programme and a lack of motivation to complete it. On the other hand, almost all DMS participants at the Business School are self nominated and often have to persuade their employers to support them. Thus the reasons for attending are more self-directed and result in a stronger motivation to complete. This issue will be discussed further in Chapter 3.

However, Kolb and Honey and Mumford (Op. Cit.) have shown that individual managers will learn more effectively from learning events that reflect their own individual learning style. The type of learning on an NVQ course is quite different from that on a DMS course. Learning is work-based and requires the ability to reflect on the way work is done in relation to the Management Standards and to learn through that experience. Thus participants on NVQ courses need to be able to go round the full learning cycle (see Figure 2.9) of experiencing, reflecting, conceptualising and experimentation. This suggest that those participants with a learning style that is skewed will have more difficulty in learning from their work activities and consequently fail to see the benefits of the assessment activity.

Boggon (1997) suggested that, based on his observations as a course tutor, reflector/theorists seem to be able to generate evidence more quickly and were able to formulate individual ways of presenting it. Although this observation is related to the assessment part of the process and is not under-pinned by any specific research findings, it does represent some support for the view that learning style may have an influence on completion and is therefore worth exploring further.

2.8.3 Choice of instrument for learning styles

In paragraph 2.8.1 it was shown that an individual's learning style could have an effect on completion in a programme of learning. It was therefore decided to include learning style as one of the variables to explore in this research. Thus an instrument was needed to identify the learning style of course participants. Questionnaires such as the Approaches to Studying Questionnaire as used by Bossons (1988) in her study of open learning students (see paragraph 2.18 for further details of Bossons' research) were discounted because this emphasises study methods rather than the overall learning process. As discussed earlier, studying is not a major part of the NVQ programme as the majority of the learning that takes place is outside the control of the Business School.

Two instruments that identify learning style were discussed in paragraph 2.8.1. These are the Learning Styles Inventory (LSI) developed by Kolb (1991) and the Learning Styles Questionnaire developed by Honey and Mumford (1992). Both are validated instruments that have been tested over a number of years. The author also has experience of using both instruments on training sessions with managers. However, it should be noted that Beaty (1994) in a doctoral research study on students at the University of Illinois did not find any significant relationship between learning style and attrition using the LSI.

The LSI is based on nine sets of four words relating to learning style. Respondents are asked to rank order each set of four words by assigning a 4 to the word that best characterises their learning style, a 3 to the word that next best characterises their learning style and so on down to a 1 for the word that is least characteristic. Scores against the four dimensions of Concrete Experience, Reflective Observation,

Abstract Conceptualisation and Active Experimentation are thus calculated and fall in the range 6 to 24 (only six of the words are used to calculate each dimension). The scores are compared with a norm group consisting of 127 practising managers and 512 Harvard and M.I.T. graduate students.

The LSQ is based on 80 statements relating to aspects of the learning. Respondents are asked to tick if they 'agree more than they disagree' with each statement or put a cross if they 'disagree more than they agree'. Since there are no right or wring answers, people are asked to respond to each item honestly. There are 20 statements for each of the four learning styles of Activist, Reflector, Theorist and Pragmatist resulting in scores between 0 and 20 for each style. These are then compared with a norm group of 3500 managers and professional people working in industry and commerce in the UK.

As the questionnaires were to be mailed out to course participants, an important criterion in the choice of instrument was that respondents should be able to complete it without the researcher present. In the researcher's experience, however, people filling in the LSI frequently had difficulty with the meaning of the words used and with relating these to the concept of learning style. They therefore often needed to seek clarification from the person administering it. As Honey and Mumford put it:

"since most people have never consciously considered how they learn, it is not helpful to ask questions that directly enquire into this" (Honey and Mumford, 1992).

This problem did not arise with the LSQ in which the statements ask about behaviours which are indicative of their learning preferences and from which their learning styles can be derived. Hence the LSQ was chosen as the more appropriate instrument for this research.

A further advantage of the LSQ was that the norm group represented a larger number of managers and professional people in the UK. Whilst there is no evidence that UK managers have different learning styles from those in the USA, the LSI does include a large group of graduate students in the norm group which could affect comparisons.

The validity of the LSQ is discussed further in the chapter on methodology, paragraph 4.3.3. A copy of the questionnaire is included in Appendix 10.

2.9 The scale of student attrition from courses

The subject of student attrition or dropout from courses has attracted much investigation in recent years (Summerskill, 1962; Pantages & Creedon, 1978; Miller, 1991). Much of the original research was carried out on full time, residential undergraduate students at North American Universities (Tinto, 1975, 1993; Astin 1975; Braxton and Brier, 1989), with less emphasis on part-time non-traditional students (Metzner and Bean, 1987; Miller,1991). More recent research has explored dropout in open learning courses in the USA and the UK (Kember, 1995; Rickwood, 1995) and in Further and Higher Education in the UK (McGivney, 1996). Just prior to the submission of this thesis (December, 1999), the Higher Education Funding Council for England (HEFCE) has published performance indicators for the non-continuation of students in publicly funded higher education in the United Kingdom with a view to encouraging institutions to actively manage the issue of student attrition.

In the 1960s there was rapid expansion of student numbers in the USA and student dropouts were expected and viewed as a natural by-product of the higher education process. Any financial implications were simply addressed by recruiting more students. With increasing financial pressures in the 1970s and shrinking enrolments, attention turned from increasing student intake to methods of improving the retention of students after they had enrolled (Astin, 1975; Pantages & Creedon, 1978; Tinto, 1993). According to Tinto:

"More students leave their college or university prior to degree completion than stay. Of the nearly 2.4 million students who in 1993 entered higher education for the first time, over 1.5 million will leave their first institution without receiving a degree. Of those, approximately 1.1 million will leave higher education altogether, without ever completing either a two or a four-year degree program." *(Tinto, 1993, p1)*

This represents a national average dropout rate of 46% for the USA. This is broadly in line with other studies but the figures do mask significant variations between institutions. Astin (1975) found that the departure rate for individual four-year

colleges ranged from a high of over 80% to as low as a reported 7% of entering students over a five-year period.

It would also appear that dropout rates have not significantly changed over a longer period. It is difficult to make exact comparisons between different studies because of differences in definition of dropout. However according to Astin (1975):

"Although the figures are not precisely comparable, data from earlier studies (Astin, 1972; Astin and Panos,1969; and Bayer, Royer and Webb,1973) indicate that persistence among college students has, if anything, increased during recent years."
(Astin, 1975, p12)

Summerskill (1962) reviewed thirty-five attrition studies conducted over a 40-year period from 1913 to 1953. He found that the percentage of students lost to a college over a four-year period had not changed significantly in four decades. The median loss reported by those studies was 50%.

In the UK, non-completion or dropout from courses has been of concern for many years but relatively few statistics have been available from UK higher education institutions on the levels and reasons for dropout. McGivney conducted a research project in 1995 commissioned by the former Employment Department that involved a study of the attendance and withdrawal patterns of mature students in further and higher education. She found that before 1994/5, little detailed information on student retention and withdrawal patterns was generally available.

"It is extremely difficult to obtain an accurate picture of student retention and withdrawal patterns because of the dearth of data and the wide differences between sectors, funding bodies and individual institutions in the ways in which they define and calculate non-completion." *(McGivney, 1996, p21)*

Information available from a Department of Education and Science analysis of withdrawals of first-year students on full-time degree or sandwich courses in the polytechnic and college sector in 1987/8 revealed an overall 'exit rate' of 16% after the first year. Department for Education (1993) figures for the whole sector between

1983 and 1992/3 show that the number of students on full-time and sandwich first degree courses leaving because of examination failure, ill health, personal and other reasons, and those switching to lower level courses, varied between 14% and 17% in each year.

The Committee of Vice-Chancellors and Principals (CVCP) claimed an average dropout rate of around 13%.

"Our figures show that the volume of students successfully graduating is 87 per cent which has remained constant for years. A 13.2 per cent dropout rate is nothing to be ashamed of." *(quoted in Times Educational Supplement, 19 August 1994)*

In December, 1999, the HEFCE (1999) published performance indicators for all 175 publicly funded higher education institutions in the UK. These show an average first year dropout of 13% with individual institutions varying between a low of 1% and a high of 25%. Out of the average of 13%, 3% transferred to other institutions and 10% were lost from higher education. These figures match those quoted by the CVCP in 1994. These figures for UK dropouts were collected on a one-year, cross-sectional basis that makes comparison with the longitudinal studies of Astin (1975), Tinto (1993) and others difficult. However, Astin's study (1975) suggests a first year dropout in the USA of 12.6%, which is comparable with the UK statistics.

The HEFCE also made projections for the percentages of students that would complete their course. They estimated that 77% of students would complete their programme at the institution where they started and that 80% of starters would obtain a degree eventually. These projections were based on the existing course year profiles at each institution. These figures seem low compared with those of the USA with Tinto estimating the overall completion rate of 54%. However, closer examination of the HEFCE statistics show that students who drop out before the 1st December were not included in the figures. This was because institutions adopt different practices in dealing with these registrations and hence their inclusion would make comparisons across institutions more difficult. Thus if the dropouts between the start of the course and the cut-off date of 1st December were to be included, the figures would show higher levels of non-completion. Nevertheless, the HEFCE

argue that these figures do show that the UK has lower non-completion rates than the USA.

Research in other areas shows a wider concern for the 'problem' of dropout. In reviewing the literature for distance learning programmes, Kember (1995) comments as follows:

"From the figures which are available it can easily be seen that attrition is considerable. Glatter and Wedell (1971) reviewed correspondence courses and concluded that drop-out was much higher than in full-time courses and could reach 70%. I suspect that even this figure was largely based on the better courses and more proficient institutions, which were willing to release figures."

"Shale (1982) reports course completion rates for Athabasca University of 28.8%, though these rose to 58.2% if non-starters were excluded. Woodley (1987) maintains that just over fifty percent of students who complete the registration process at the Open University of the United Kingdom will eventually obtain a degree. It is pertinent to point out, though that, of the 1982 intake, 28% of provisionally registered students did not complete the final registration process."

"In the distance education university in Venezuela the drop-out rate was 79% (Rumble, 1982a, p. 199). At the Sukhothai Thammathirat Open University of Thailand, 62% of students were no longer enrolled after two years (Wichit Srisa-An, 1984, p.334). In Costa Rica's open university, 76% had dropped out by the end of their fifth semester (Rumble, 1982b, p. 82). In Pakistan's distance teaching university some courses reported drop-out rates as high as 99.5% as early as the first semester (Fleming, 1982, p. 143). This brief review is sufficient to show that open learning institutions, wherever in the world they are, should not be surprised if they lose half or more of their enrolling students." (Kember, 1995, p23)

In the UK, Rickwood (1995) quantified the overall attrition rate at the Open University as follows:

27% of Initially Registered students do not Finally Register

20% of Finally Registered students quit before the end of their second year
35% of Finally Registered students don't make it beyond their fourth year
- which leaves 45% of those who get past Final Registration to graduate."

(Rickwood, 1995, p6)

Concern about student attrition is not confined to undergraduate courses. Bowen and Rubenstine (1992) studied 30 years of statistical records on more than 50,000 people who were enrolled on doctoral-level programmes at ten major universities or who were part of national fellowship programmes at other institutions. They found that fewer than half of all entering students in the Ph.D. programmes earned their doctorates and many of those who eventually received the degree had taken from 6 to 12 years to do so. They concluded that the rates of attrition among doctoral candidates and the length of time taken to earn a PhD were unacceptable.

Statistics from the Economic and Social Research Council (1987) in the UK showed that the overall submission rates for Ph.D.s was 25% after five years and 50% after eight years.

The initiative for this doctoral research study came from the unsatisfactory level of dropouts in the part time management NVQ programme at Bournemouth University Business School. However, it can be seen that the level of non-completion in a wide range of courses makes this a significant issue to all types of educational programme and to all educational institutions. Whilst a certain level of dropout is to be expected for a variety of reasons, a situation where typically only half of students entering a programme go through to completion demands further examination. What are the factors that affect non-completion? How much is due to personal characteristics and circumstances and how much is influenced by the particular institution at which the student studied? The next few sections examine these issues in more detail.

2.10 Terminology and interpretations of non-completion

One of the difficulties in comparing both the statistics on non-completion of courses and on the research findings themselves is the differing definitions and terminology that are used to describe non-completion and dropout. Whilst the blanket term

dropout is often used to describe any form of withdrawal, other common terms are wastage, exits, attrition, withdrawal, non-persistence, non-continuation and non-completion (McGivney,1996). Rickwood recommends the term 'non-completion' as it is relatively neutral whereas each of the other terms is *"coloured by its own connotations and assumptions." (Rickwood, 1995 p2).*

Astin (1975) classified student attainment into three categories.

Persister: someone who had either earned their degree or, after four years of study, were still enrolled and planning to complete the degree programme.

Stopout: someone who had temporarily stopped in their studies but were still planning to complete their degree.

Dropout anyone who could not be classified as a persister or stopout.

Tinto (1993) is quite critical of much previous research, including Astin, for not clarifying the different forms of non-completion sufficiently.

"There is still some confusion concerning both the varied character of different forms of departure and the complex causes which lead different individuals to depart from varying institutions of higher education. That this is the case, despite widespread research, reflects to a significant degree the failure of past research to distinguish adequately between quite different forms of leaving." (Tinto, 1993, p35)

Both Rossman & Kirk (1970) and Tinto (1993) argue that many researchers fail to distinguish between involuntary departure resulting from academic dismissal and voluntary departures occurring despite the maintenance of adequate grades. Tinto goes on to say that this is why, for example, one set of studies may claim that the level of ability is directly related to leaving, another arguing the reverse and yet another asserting that no relationship exists between the two. The fact is that the different studies are referring to quite different forms of leaving.

Pantages & Creedon (1978) argued, however, that the distinction between voluntary and involuntary departure is not relevant because a voluntary dropout is just as affected by social forces as a non-voluntary dropout. Separating 'non-voluntary' dropouts separates the crucial issue of why students who qualified for admission to college get poor grades in the first place. Thus they argued that academic success or failure should be regarded as intervening variables that lead to withdrawal rather than as part of the dependent variable. However, whilst this argument has some merit, the separate classification of voluntary and involuntary reasons does not prevent studies of why students get poor grades – indeed it may well draw attention to this issue.

The general use of the term 'dropout' leads one to assume that all forms of leaving are essentially the same and are negative in form. However students often leave courses for reasons that are positive for them although they may be negative reasons for the institution. As Rickwood put it: *"sometimes non-completion is indeed a positive step" (Rickwood, 1995, p 20).* It may be that the student has obtained what he wanted from the course and does not want the degree award. Alternatively he might be leaving to take up a full time job or to transfer to another course or institution.

Tinto also argues that little attention has been given to distinguishing the many differences between those who leave institutions (institutional departures) and those who withdraw from all forms of formal higher education (system departures). In Astin's (1975) study of a national sample of college students across institutions, dropout is commonly defined as referring to those persons who fail to obtain college degrees within a specified period of time. Institutional departures who transfer and obtain their college degrees elsewhere are not counted as dropouts. This is acceptable if conclusions drawn only relate to departures from the higher education system as a whole. They are limited in their ability to identify reasons for leaving individual institutions - and hence limited in their ability to influence institutional policy. For example, for the system as a whole, students of proven academic ability are on average more likely to earn degrees than are persons of lower ability. For any single institution it may well be that the reverse is true. For example, a student performing well at a lower status institution may transfer to one of higher status or reputation to complete his/her studies.

Kember (1995) points out that clear definition is of special importance for distance education because of the variety of procedures among institutions for registration and recording student progress or withdrawal. It is common for students to enrol but then to submit no assignments at all. Some institutions will count these as early withdrawals. Other institutions count course enrolment a few weeks after the start of a course to allow the numbers to settle down. An extreme case is the Open University which offers up to a ten month initial registration before the course begins and a further two months before a final commitment is required (Rickwood, 1995). Most institutions would not however include these in their figures although the reasons why a group of people initially register and then withdraw does represent a variation on the same problem of dropout.

Kember has illustrated the range of withdrawal routes as shown in Figure 2.10.

The non-starters are those who enrol but fail to attend on the first day of the course. The second group are those who, after registration, cease sending in assignments without formally withdrawing (informal withdrawals). This group are generally regarded as failing a course in formal recording procedures. Other students formally withdraw from a course for a variety of reasons. A fourth group are those who fail academic assessments and are considered as academic failures.

The fifth group consists of those students who accumulate credits towards a degree and are permitted to take time off between units (the non-continuers). It is often difficult to determine whether they will complete the full programme or not. The final group of non-completers from the institutional point of view are those who transfer to other programmes, either within or external to the institution.

Thus Kember argues that until institutions start to recognise these potential routes for student departure when presenting data, the statistics will have limited meaning. Comparable performance data will only emerge when common definitions are agreed which take into account the alternative outcomes.

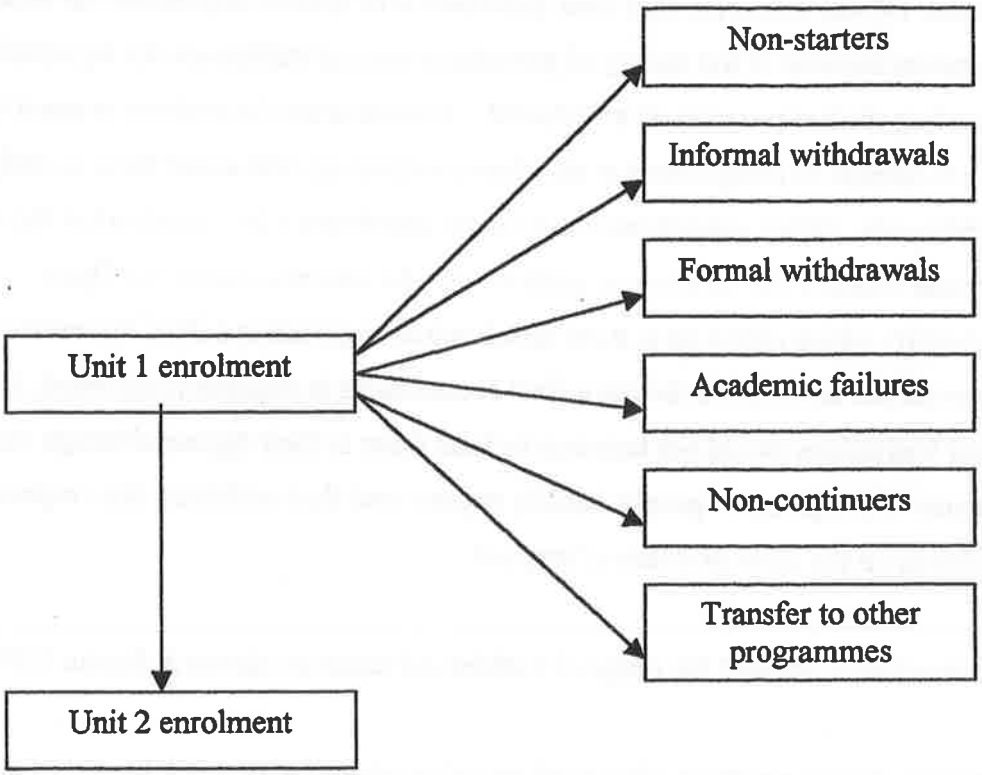

Figure 2.10 Potential paths out of courses (Kember, 1995, p28)

Classification of student departure in this way is certainly helpful. Firstly, it enables statistics across studies and between institutions to be compared. Secondly, the factors affecting non-completion in the different groups are likely to be different. Astin (1975) noted, for example, that non-continuers (or 'stopouts') were much more likely to give illness or accident as a reason for leaving college than withdrawals. Two institutions with similar overall non-completion rates will tackle the problem quite differently if one results from high academic failures and the other from a high percentage of non-starters.

"It is extremely important for researchers to reach a consensus in the manner that the critical groups in attrition research are to be defined. The validity of combining the findings from separate studies depends, in part, on how attrition was operationally defined in those studies" (Pantages & Creedon, 1978 p51)

"The results of many attrition studies are not comparable because they, in fact, deal with different phenomena" (Panos & Astin, 1968 p70)

The focus of this study on non-completion in NVQ courses is mainly on the two groups of informal and formal withdrawals. Non-starters are excluded for the sample as all participants will have attended the initial introductory workshop. Academic failure as a category does not apply to the NVQ programme. Candidates are assessed as competent, not yet competent or insufficient evidence of competence. In either of the last two categories, participants are able to continue to develop the relevant competences or find further evidence of existing competence. Whilst individual students react differently when a unit is rejected as insufficient evidence, a resulting withdrawal would still be appropriately classified as either an informal or formal withdrawal. Non-continuers and transfers are not classified as non-completers provided they meet the criterion of completing one unit in the first year of the course (see paragraph 4.2 for more details of the research sample).

Eckland (1964), Tinto (1993) and others have also pointed out the limitations of many of the earlier studies that were cross-sectional in their methodology. These studies do not reveal what happens (educationally) to the students who drop out. To rectify this problem, Eckland conducted a ten-year follow up study of all those students who dropped out during a four-year sequence to graduation.

Eckland's study found that although 49.7% of the students graduated after a varying period of continuous enrolment, only 36.5% of them completed their program within four years. Of the students who dropped out of college for any length of time, he found that 70% of them re-enrolled at either the same institution at a later date or at another college, and of these students, approximately 55% graduated. Overall, then, Eckland's study revealed that of the students who enrol in college, slightly over 70% will eventually graduate from some institution (and he added that the figure may be as high as 74%). The findings of Eckland have been supported by other research (e.g., Trent & Ruyle, 1965). Jex and Merrill (1962), in another ten-year study, estimated that approximately 60% of the students who drop out will eventually re-enrol at the same or another institution and graduate. Johansson and Rossmann (1973) have estimated that 80% of the dropouts will reenroll and 60% of them will graduate. *(Pantages & Creedon 1978, p55)*

According to Pantages and Creedon the three important implications arising from these studies are that:

1) Unless dropout is clearly defined in relation to the purposes of the study, longitudinal studies will have to cover more than four years (the normal time to graduation)

2) Previous investigations have overestimated the national rate of attrition. Whereas earlier studies place the figures at the 40% level, Eckland and others revised the estimates downward to the 30% level.

3) The original predictor variables that relate to academic success and graduation in four years may not be applicable to the student who drops out for a time before going on to graduate.

It is therefore argued that cross-sectional studies do not adequately take into account the stopout or non-continuer – the person who temporarily stops their studies but who does eventually complete.

Thus the differences in terminology for student non-completion means that care must be taken when comparing the results of different studies. This does not just apply to a comparison of statistics. The different classification of non-completers reflects different reasons for leaving courses, which result from different influences on the student.

2.11 The significance of student non-completion

Does student non-completion matter? And if so, to whom?

In some institutions it has been considered as a natural by-product of the process of higher education. Woodley and Parlett (1983) cited in Rickwood (1995), suggested nine reasons why dropout did not provoke much "heart-searching" in the Open University.

1) *Drop-out has no visible impact on the campus*
2) *Course teams are not usually held responsible*
3) *A certain level of dropout is considered inevitable*
4) *Some dropout is thought desirable, to prove rigour*
5) *Students tend to blame themselves, not the university*
6) *Students are responsible adults - concern is patronising*
7) *There is no way of comparing the OU to other institutions*
8) *Some dropout can be positive - e.g. transfer out*
9) *Regional staff find out too late to intervene effectively*

(Rickwood, 1995, p6)

However, deeper consideration of this question shows that it matters to both the educational institution and the individual student.

"New funding and quality regimes will challenge such assumptions and habits and should obliterate any lingering complacency." *(Ibid, p6)*

From the institutional viewpoint, one can identify financial, political, reputation and ethical issues. Financially, an institution's income from both fees and funding councils is on a per capita basis. Losing students means losing income. Additionally there is the waste of resources involved in recruiting students who then leave. Although some loss is expected and allowance is made, losing students in the first year of a three or four year course means that, in effect, a further two or three years fee income is lost.

According to Martinez (1997), in terms of funding, the restriction on public finances will tend to shift the emphasis away from expansion (more new students) towards more successful and better managed (and hence more predictable) outcomes for a broadly static number of students.

Political consequences arise from the fact that wastage and dropout are seen as negative factors by funding councils and governments. Institutions need to be seen as cost-effective.

The academic debate on non-completion is also a public issue as shown by articles in the national press (Westcott, 1995). Poor completion rates are likely to rebound on institutions by giving rise to falling application rates.

Finally, there are the ethical considerations:

"Even if we discount institutional preoccupations as narrow, negative or misconceived, we cannot dismiss so lightly its impact on the wellbeing of students. Does an institution describe its courses honestly and clearly, and does it take seriously the duty of care towards those it admits? Might the need to recruit to externally-imposed targets outrun the ability to manage the size and breadth of the student body." *(Rickwood, Op. Cit., p4)*

From an individual point of view, students who complete an academic course for which they have enrolled derive significant psychological and material benefits. On the other hand, those who do not complete can feel disappointed, if not distraught. Although it is recognised that non-completion can sometimes be for positive reasons, the sense of failure that can accompany dropout can significantly affect the individual's attitude to study. The lost opportunity for career development through gaining academic awards may also be of major consequence.

For those courses at the Business School that were sponsored by employing organisations, an additional important factor was the attitude of the employer to low completion rates. Sponsors expected the majority of the course participants to complete the programme. Completion rates of around 40% were not considered to be acceptable both in terms of the effect on the participants and in value for money.

2.12 Theories of student attrition

Although academic achievement is an important factor in completion, a review of the research into reasons for students leaving their courses shows a wide variety of reasons for non-completion. As Pantages & Creedon put it:

"the relationship between scholastic achievement in college and retention or withdrawal does not predict all attrition." *(Pantages & Creedon, 1978, p53)*

Research studies into student attrition reflect five broad schools of thought that underpin the various theories presented. These are:

1) Psychological theories
2) Societal theories
3) Economic theories
4) Organisational theories
5) Interactional theories

Psychological theories

Psychological theories have developed around the view that individual personality attributes distinguish completers from non-completers in their response to similar educational circumstances. Some models (e.g. Summerskill, 1962) refer to the importance of intellectual attributes in shaping the individual's ability to meet academic demands. Others (Heilbrun, 1965; Rossmann and Kirk, 1970) stress the roles that personality, motivation and disposition play in influencing the student's willingness to meet those demands. More recently, Ethington (1990) using expectancy theory and building on Eccles model of student achievement (Eccles et al., 1983) emphasises the role of two factors, individual expectations of success and the value placed on college attendance. It is argued that these two factors which themselves reflect other personality traits, will shape how individuals approach college tasks and will ultimately influence their persistence via subsequent achievement.

The different approaches to research in the psychological school share a common theme. That is that retention and departure are primarily the reflection of individual actions and therefore are largely due to the ability or willingness of the individual to successfully complete the tasks associated with college attendance.

Whilst accepting that there is some truth to the psychological view of departure, Tinto argues that:

"Psychological approaches focus on but one set within a broader matrix of forces which impinge upon the withdrawal process. They generally ignore those forces that represent the impact the institution has upon student behaviors. As a result, psychological theories of departure invariably see student departure as reflecting some shortcoming or weakness in the individual" *(Tinto, 1993, p85)*

Nevertheless, this is a recognition that psychological factors do 'impinge' on the withdrawal process although they must be considered in conjunction with other influences.

Societal theories

Societal theories of departure are at the other end of the spectrum from psychological theories in that they emphasise the impact of wider social forces on the behaviour of students. Rather than focussing on personality characteristics, societal theories stress those attributes of individuals, institutions and society such as social status, race, institutional prestige and opportunity structure that describe the person's and the institution's place in the broader hierarchy of society (e.g. Duncan, Featherman and Duncan,1972; Pincus,1980)

In stressing the importance of external forces on student persistence, societal theories often overlook the impact of 'within-institution' forces (e.g. quality of teaching, relationships, degree of support etc.). Consequently, they are frequently insensitive to the situational character of student departure and the important variations in student leaving that arise within institutions. Societal theories are useful in

explaining broad trends in retention in society but are less useful in explaining different forms of institutional departure.

Economic theories

Economic theories of student departure assume that the decision to remain at college is an economic one based on economic benefits accruing from a college education and individual financial resources available for continuing education. Generally, however, they have been unable to explain many of the forms of departure that arise within institutions. Though there is evidence that financial considerations are important to the continued persistence of some students, mainly from working-class and disadvantaged backgrounds (Nora and Horvath, 1989), they tend to be of secondary importance to most other students. Two reasons may explain this. First, the effect of finances upon persistence is usually taken into account in the decisions regarding college entry, that is, whether to attend, where to attend and in what form (full-time or part-time) to attend (Manski and Wise, 1983). Secondly, though students frequently give finances as reasons for withdrawing, their true reasons often reflect other forces not associated with finances, such as dissatisfaction with the institution (Tinto, 1993).

Organisational theories

Organisational theories see student departure as reflecting the effect that the organisation has on the socialisation and satisfaction of students. The basic tenet is that departure is as much, if not more, a reflection of institutional behaviour as it is of the individuals within an institution. Thus researchers in this school look at the effect of organisational dimensions such as bureaucratic structure, size, faculty-student ratios and institutional resources and goals on the rates of student institutional departure. A good example of this approach is Bean's application of the Price-Mueller model of work place turnover in work organisations to college student attrition. His research showed that organisational attributes such as participation in organisational decision making, fairness in the administration of policies and rules and communication indirectly affect students' withdrawal decisions (Bean, 1980, 1983).

The organisational approach shows that the organisation of educational institutions, their formal structures, resources and patterns of association does affect student retention. As in formal organisations generally, organisational decisions within higher education impact on the satisfaction of all members of the organisation, students as well as faculty and staff (Braxton and Brier, 1989). However they do not explain individual departure in terms of why different types of student respond to the organisational influences by leaving.

Interactional theories

Interactional theories have attracted the most interest in recent years. These theories reflect both individual and organisational attributes when seeking to explain student behaviour. Retention is based on the concept of person-role fit, with integration into the student role central to the retention process. The more closely aligned the individual is to the student role, the more likely he or she is to stay. The greater the discrepancy between the individual's self perception and the student role, the greater the likelihood of departure. Interactional theories of student attrition are discussed in more detail in the next section.

2.13 Interactional theories of student attrition

2.13.1 Recognition of interactional theories

The most important work associated with interactional theories is that of Tinto (1975,1987, 1993). His model for student departure has had a major impact on recent research into student attrition and is widely recognised. According to Ethington:

"In the recent large body of literature related to student attrition, the dominant perspective underlying the research has been the theoretical, explanatory model of the student persistence/withdrawal process developed by Tinto (1975)"

(Ethington, 1990, p279)

Braxton and Brier (1989) considered Tinto's model to *"exemplify the interactional approach" (p48).* Kember (1995) described Tinto's model as the most widely

respected longitudinal study and Christie and Dinham (1991) asserted that it is one of the most widely accepted views of institutional departure. A review of the literature shows that Tinto's model *"has been the subject of numerous validation studies"* (Miller,1991, p20).

Tinto's model is based on two arguments:

1) Persistence is largely the result of a longitudinal process of person-environment fit.
2) Academic and social integration are critical determinants of persistence

In developing his model, Tinto drew heavily on two key constructs. These are Van Gennep's (1960) work on "rites of passage" and Durkheim's (1961) theory of suicide. Tinto drew analogies between both of these sociological models and the influences on student dropout.

2.13.2 Van Gennep's Rites of Passage

Van Gennep (1960), a Dutch anthropologist, saw life as a series of passages leading individuals from birth to death and from membership of one group or status to another. He studied the rituals and ceremonies that eased the dislocation and disruption that accompanies these changes. He argued that the process of transmission of relationships between succeeding groups was marked by three distinct phases of stages, each with its own specialised ceremonies and rituals. He called these three stages separation, transition and incorporation.

Separation involves the separation of the individual from past associations and a decrease in interactions with the group that the individual is leaving. It can be accompanied by a ceremony indicating that membership of that group is no longer necessary to the leaver. School award ceremonies are an example. Transition is a period during which the person begins to interact in new ways with members of the new group and to learn about their norms and behaviours. Isolation, training and sometimes ordeals are employed as mechanisms to ensure the separation of the individual from past associations and the adoption of behaviours and norms

appropriate to membership of the new group. Incorporation means becoming accepted as a member of the new group and taking on functions associated with membership. Though the person may interact with past group members, they will now do so as members of the new group.

Tinto (1987) saw a parallel between Van Gannep's stages in rites of passage and the movement of students from the high school community to college or university. Many college students move from one community, usually that of family and high school to another, that of the college or university. This involves separation from high school friends and the local community. Those who physically move to live on a college campus need to undergo a social and emotional change. Tinto saw this transition as being generally similar to the passage of individuals between human communities. He, further, saw that the students' ability to overcome the problems of adjustment and become incorporated into the new college community would have a major influence on whether they persisted as a member of college society.

The second transition phase involves students adapting to the ways of college life and establishing themselves within the social and intellectual community of the college. How easy they find this depends on how closely their view of academic life and their social circle match those of the college they are entering. Those with a conception of academic study which does not match the college expectations will find the transition difficult. Those who come from a different social background to the majority of the other college students are similarly likely to have more difficulties. The greater the difference between the home community and college life, the more difficult the transition process is likely to be. This has obvious implications for minority groups, overseas students, mature entrants or those from small rural or isolated communities.

The final phase is that of incorporation into the social and intellectual life of the college or university. Some universities run an induction period for new students but mainly this integration comes from formal and informal student-student and staff-student contacts. If the process is successful, the newcomer will eventually feel an established member of the college community.

The three phases of transition do seem to fit the process of transfer from high school pupil to University undergraduate for full-time students. The culture of undergraduate students both in social and academic respects is quite different from that of school pupils and it does take time for students to adjust. This view is supported by Christie and Dinham (1991) who interviewed 25 students at a large US university to examine their passage into the university community. They concluded that Tinto's interpretation of Van Gannep's work provided a useful framework for interpreting their data. They found evidence that students who maintained contacts with high school friends made less progress towards integrating into the university community. Living on campus and participating in extra-curricular activities were mechanisms for incorporation. Christie and Dinham (1991) believed that their findings indicated that external commitments are a stronger influence on persistence than might be indicated by Tinto's model though it should be noted that their view was based on only a small sample of 25 students in one university.

Although the concept of transitional phases does seem to fit the situation of full time students, the transitional phases are not so marked for part time mature students. When managers are taking part time courses they are still very much a part of their work organisation which remains the dominant culture. However, they still need to make some adjustment to the academic or course culture so the concept of transition does have some validity, albeit on a less traumatic level.

2.13.3 Durkheim's theory of suicide

Tinto's interest in the theory of suicide in relation to student departure lay in the view that both forms of behaviour can be understood, in most circumstances, to represent a form of voluntary withdrawal from local communities that is as much a reflection of the community as it is of the individual who withdraws.

Durkheim distinguished four types of suicide: altruistic, anomic, fatalistic and egotistical. The first three of these refer to suicides from societies of particular types or when specific conditions apply.

Egotistical suicide is that form of suicide which arises when individuals are unable to become integrated and establish membership within the communities of society and therefore is of most relevance to studies of student departure. Durkheim referred to two forms of integration – social and intellectual. Social integration refers to that form of integration which results from personal affiliations and from the day-to-day interactions with other people. Intellectual integration comes from the sharing of values and beliefs which are held in common by other members of society.

Durkheim argued that if either form of integration were lacking, there was some pressure towards suicide, as individuals would become either social isolates or intellectual deviants. Egotistical suicide is normally accompanied by the lack of both social and intellectual integration.

Using these ideas, Tinto (1975) argued that dropout from college was more likely to occur among students who were unable to establish membership of the college's social community or who differed from the prevailing values and intellectual norms of the college. Institutions who were not able to provide mechanisms by which students can achieve these forms of integration are likely to be those with high dropout rates

2.13.4 Tinto's model of institutional departure

Tinto presented his initial model for dropout from college in 1975 (Tinto, 1975) and subsequently refined it in 1993 (Tinto, 1993) as shown in Figure 2.11. This model relates to the process of departure as it occurs within a single institution of higher education. It focuses primarily, though not exclusively, on the events which occur within the institution following entry and/or which immediately precede entrance to it. It is not a systems model of departure. Nor is it intended to account for individual action after departure such as transfer to another institution. It seeks to explain how interactions among different individuals within the academic and social systems of the institution lead individuals of different characteristics to withdraw from that institution prior to completing their degree programme. The model pays special attention to the process by which individuals come to voluntarily withdraw from

institutions of higher education and is not primarily concerned with academic dismissal.

Referring to Figure 2.11, individuals enter institutions of higher education with a range of differing family and community backgrounds (e.g., as measured by social status, parental education, and size of community). They have a variety of personal attributes (e.g., sex, race, and physical handicaps), skills (e.g., intellectual and social), financial resources, dispositions (e.g., motivations; intellectual, social, and political preferences) and varying types of pre-college educational experiences and achievements (e.g., high school grade-point average). It is argued that each attribute will have a direct impact upon departure from college through its effect upon levels of academic performance in college. More importantly, each also affects departure indirectly through its effect upon the continuing formulation of individual intentions and commitments regarding future educational activities. Intentions or goals specify both the level and type of education and occupation desired by the individual. Commitments indicate the degree to which individuals are committed both to the attainment of those goals (goal commitment) and to the institution into which they gain entry (institutional commitment). These, together with skills and dispositions, describe the financial, social, and intellectual resources and orientations regarding continuing in education which individuals bring with them into the college environment. Along with external commitments, they help establish the initial conditions for subsequent interactions between the individual and other members of the institution.

Given individual attributes and dispositions at entry, the model further argues that subsequent experiences within the institution, primarily those arising out of interactions between the individual and other members of the college, student, staff, and faculty are centrally related to continuing in that institution. Interactive experiences which further one's social and intellectual integration are seen to enhance the likelihood that the individual will persist within the institution until degree completion, because of the impact integrative experiences have upon the continued reformulation of individual goals and commitments. Positive integration serves to raise one's goals and strengthen one's commitments both to those goals and to the institution within which they may be attained. Conversely, the model suggests that,

other things being equal, the lower the degree of one's social and intellectual integration into the academic and social communities of the college, the greater the likelihood of departure.

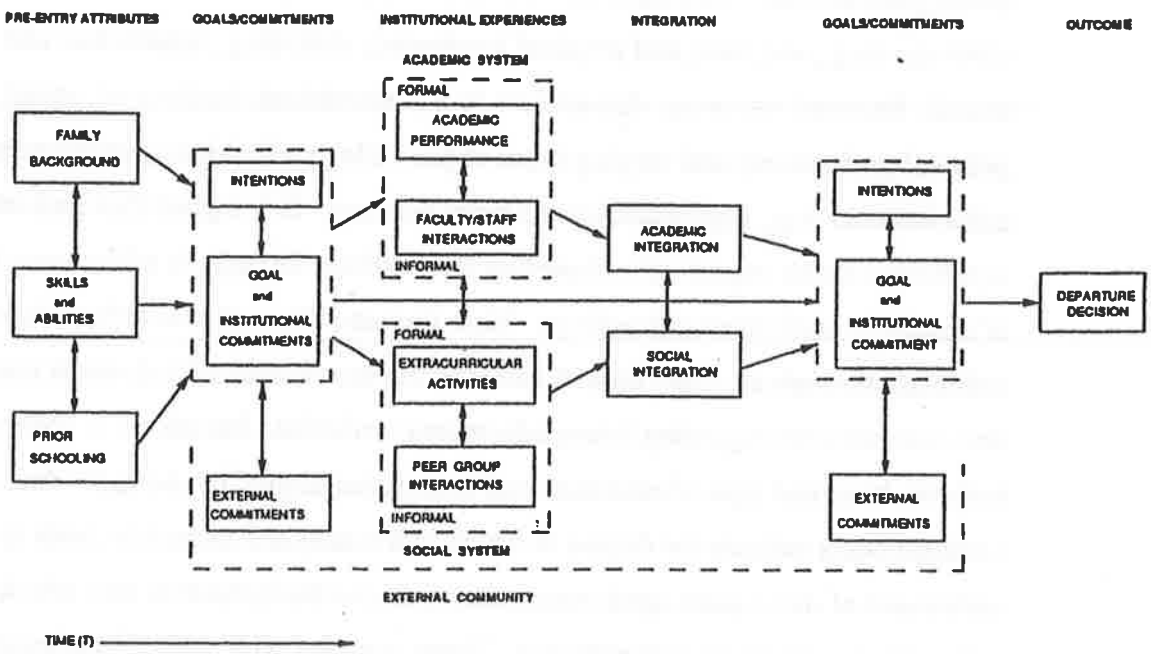

Figure 2.11 Tinto's longitudinal model of institutional departure (Tinto, 1993, p114)

To the degree that the individual also participates in communities external to the college (e.g., family, work, and community), the model argues, events in those communities may also shape persistence in college. When those external communities are strong, as they are for commuting students, their actions may serve to influence, if not counter, events within the college. Thus external events may influence departure indirectly via their impact upon student social and academic integration and/or directly via their effect on commitments - being 'pulled away'. As such, the model leaves open the possibility that individuals may withdraw from college even when experiences within the college are largely positive. At the same time, it also allows for the fact that external communities, for instance the family, may reinforce persistence.

2.13.5 Applicability of the interactional model to part time students

Tinto's model for student departure gives us some good insights into the nature of persistence on courses but focuses primarily on undergraduate students who are in full time residence at universities. Thus, for example, the concept of social integration is an important one. This environment, however, is not applicable to those who are not in residence or for those part-time, adult students who are the subject of this thesis. As Miller put it:

"Since this approach fails to account for forces external to the college which impact on student retention, it is not well suited to the study of non-residential institutions or commuting students." *(Miller, 1991, p20)*

Miller goes on to say that most of the validation studies on Tinto's work have been based in large residential universities.

"Rarely has any attempt been made to define a mature or part-time student separately from the student population being studied." *(Ibid, p20)*

In 1983, Pascarella and Chapman published the results of their research which investigated the validity of Tinto's model across a range of different types of institution. The findings generally supported the predictive validity of the model but found some interesting differences between different kinds of institution. The basic differences concerned the concepts of social and academic integration. Social integration played a stronger role in influencing persistence at four-year, primarily residential institutions than did academic integration. The reverse was true for 2- and 4- year primarily commuter institutions where social integration was less significant.

Pascarella and Terenzini(1991) also noted that the two factors of social and academic integration may compensate for each other. Thus a high level of social integration may compensate for a low level of academic integration just as a high level of academic integration may compensate for a low level of social integration.

Neumann and Finlay-Neumann's (1989) undertook a research study to examine the effect of quality of learning experience indicators in predicting 3rd and 4th year student attrition. Interestingly, Neumann and Finlay-Neumann argued that Tinto's model only relates to departures in the first two years of a four-year programme:

"It is expected that by the third or fourth year in college, the vast majority of students have successfully coped with academic and social integration. Thus, these components, which play the key role in Tinto's framewor , are not the dominant predictors of juniors' and seniors' departure from their college."

(Neumann and Finlay-Neumann, 1989, p131)

Despite its limitations for generalisability to part-time students, Tinto's model is a useful starting point in understanding the influences on completion. Although the model is based around the concepts of academic and social integration, Tinto observes that the academic and social systems lead individuals 'of different characteristics' to withdraw. This is further explicit acknowledgement of the role of personal characteristics on withdrawal. He also acknowledges that external events will influence departure from courses, though this would be less of a factor for full-time, younger residential students than for part-time mature students with families and work commitments. Other researchers have built on his thinking in developing models for different types of student.

2.14 Studies of non-traditional student attrition

In an extensive literature review based on several hundred studies, Bean and Metzner (1985) only found four that specifically examined attrition for part-time commuter students and just five studies provided separate analyses for older commuter students. They therefore proposed a theoretical model of the attrition process for non-traditional students and tested it on a sample of part-time freshman commuter students. This model is shown in Figure 2.12.

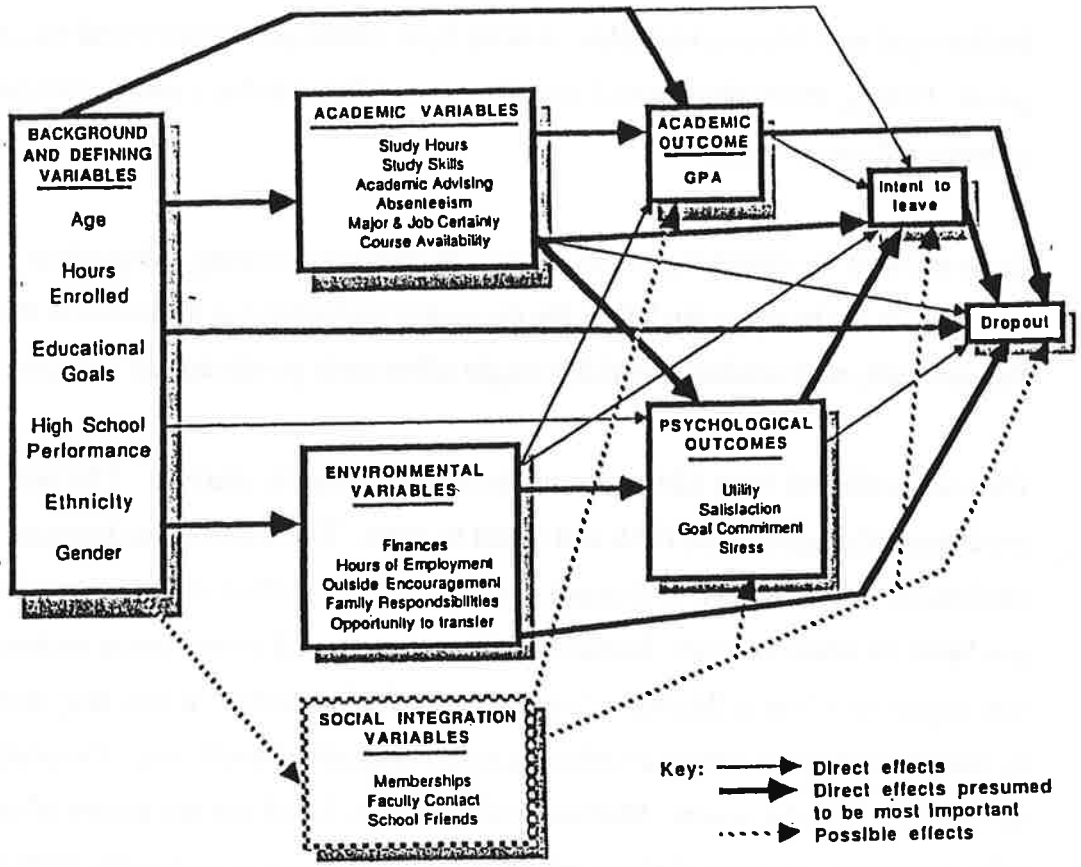

Figure 2.12 A conceptual model of non-traditional student attrition

(Metzner and Bean, 1987, p17)

Metzner and Bean (1987) defined non-traditional students as follows:

A non-traditional student is older than 24, or does not live in a campus residence (e.g., is a commuter), or is a part-time student, or some combination of these three factors; is not greatly influenced by the social environment of the institution; and is chiefly concerned with the institution's academic offerings (especially courses, certification, and degrees). *(Metzner and Bean, 1987, p18)*

The model presented indicates that dropout decisions for non-traditional students are based on four sets of variables. Students with poor academic performance are predicted to drop out at higher rates than students who perform well academically, and Grade Point Average (GPA) is expected to be based largely on past (high school) academic performance. The second major factor is intent to leave, which should be influenced primarily by the psychological outcomes but also by the academic

variables. The third group of variables expected to affect attrition is that of the background and defining variables - mainly high school performance and educational goals. Finally, the environmental variables are predicted to have substantial direct effects on dropout decisions.

Each arrow in the model represents a set of propositions relating independent variables in the boxes to the left to the dependent variable(s) in the boxes to the right. For example, each academic variable might affect each psychological outcome.

Data was collected from 624 part-time freshman commuter students. The best predictors of dropout were GPA and intent to leave. The direct effect between environmental variables and dropout were not found and these effects seemed to be mediated by intent to leave. Intent to leave was measured by two items such as "Do you expect to return to this school next semester? Next year?" It was best predicted by the psychological outcome variables, utility (perceived usefulness of course) and satisfaction with the course. Metzner and Bean also found that the effects of age (older students were less likely to intend to leave) and educational goals (higher goals, less likely to intend to leave) were stronger than anticipated.

For the four psychological outcomes, the six academic and the five environmental variables were predicted to have the strongest effects and such effects were common. The background variables were also relatively important in affecting the psychological outcomes.

Although concerned with mature, part-time students, the subjects in Metzner and Beans's study were taking traditional courses at undergraduate level. Hence the influence of academic variables would be quite different from those on the NVQ management programmes that are the subject of this research programme. However the influence of other background variables, environmental variables, educational goals and psychological outcomes on dropout of part-time and older students was identified and therefore need to be considered in the development of a model for this research.

2.15 Attrition on Open Learning Courses

2.15.1 Kember's model of student progress

Kember (1995) undertook research over a number of years on student progress on open learning courses. He drew on existing qualitative work in Australia, Papua New Guinea and the United Kingdom together with new projects in Hong Kong and Australia involving both qualitative and quantitative data.

Kember drew heavily on Tinto's model of student persistence based on full time college students (Tinto,1975,1987, 1993). Using Tinto's two key constructs of academic and social integration, he adapted the model to take account of the differences for part-time open learning students. Kember's two-track model to represent student progress on open learning courses is shown in Figure 2.13.

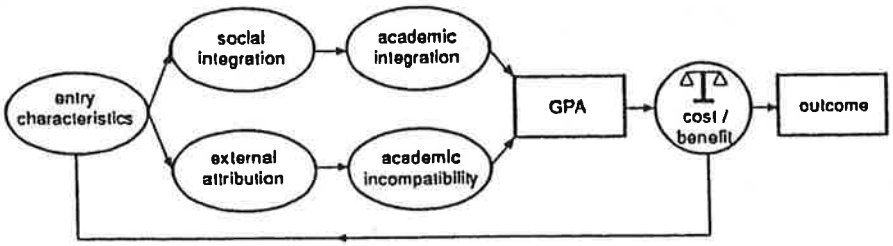

Figure 2.13 Kember's two-track model of student progress on open learning courses (Kember, 1995, p64)

The model suggests that students' entry characteristics direct them towards one of two tracks. Those with favourable situations tend to proceed on the positive track and are able to integrate socially and academically. Others take the lower, negative track where they have greater difficulties achieving social and academic integration. The components of the model are described more fully below.

Entry Characteristics

The entry characteristics in Kember's model include educational qualifications and demographic information as in other model. However, information on the family status and employment situation is also included in recognition of the differing influences on part-time students. Thus the entry characteristics include:

- Educational qualifications: educational background was included because it could influence other components of the model, rather than for any direct relationship with dropout. Kember considered that it was unlikely to have a strong direct link with student progress.
- Family status – in terms of whether the student is married, has children at home etc. These variables are not included in the model as direct predictors of success, but as indicators of the degree of social integration that will be necessary.
- Employment: the employment situation can provide motivation and stimulation to progress on a course. On the other hand, time at work is in direct competition with time to study.
- Other variables: demographic information is included in order to provide background information. It does not imply that this information has a marked bearing in student progress.

Social Integration

Unlike full-time students, adult part-time students cannot avoid existing work, family and social obligations. The social integration construct in Kember's model examines the degree to which students are able to integrate their academic study with the often conflicting employment, family and social requirements. This contrasts with Tinto's notion of social integration, which deals with integration within the social structure of the college.

External Attribution

The concept of external attribution and locus of control was discussed in paragraph 2.8.2. Kember includes this aspect in the model and suggests that lack of social integration often results in the student resorting to external attribution. Failure to find ways to integrate study with on-going commitments means that it is easy to blame the competing work, family and social pressures for the lack of integration.

Academic Integration or Incompatibility

Academic integration is interpreted as encompassing all facets of a course and all elements of contact between an institution and the students whether these are of an academic , administrative or social nature. The model splits academic integration into the positive and negative tracks, the negative being called academic incompatibility. Each contains four aspects measuring approach to learning, motivation, course evaluation and language ability.

- Approach to learning - The positive track of academic integration has a deep approach to learning whilst academic incompatibility has a surface approach. Students who adopt a deep approach to learning concentrate on the meaning underlying a text because they see its relevance to their needs and find it of interest. Students who adopt a surface approach direct their attention to the text itself and attempt to memorise facts for recall in subsequent assessment.

- Motivation - The motivation aspects are intrinsic motivation for the positive track and extrinsic motivation for the negative. Intrinsic motivation refers to the interest students have in the subject matter for its own sake. Extrinsic motivation is concerned with the student's commitment to obtaining a qualification. Intrinsic motivation was found to be related to a deep approach to study whereas extrinsic motivation was related to a surface approach.

  "Students who are extrinsically motivated probably enrolled for the qualification rather than out of interest in the subject matter" *(Kember, 1995, p109)*

- Course Evaluation - The course evaluation aspects are simply labeled positive and negative and refer to whether the student expresses dissatisfaction with the course and its support or whether they give more positive feedback.

- Language Ability - The final aspects refer to language and reading ability. For the positive track this refers to students expressing enjoyment from reading. The negative track give an indication as to whether a student's language ability equips them for open learning courses which normally rely heavily on reading.

Cost/Benefit Analysis

Finally the model includes a cost/benefit analysis. The student has to decide whether the opportunity costs of time spent studying are worthwhile in terms of interest in the subject matter, benefits from the eventual qualification or other rewards the student might derive from study. The Grade Point Average (GPA) is a measure of academic achievement and is included at this point in the model as it is considered that this will influence the decision on whether to continue with the course or to drop- out. The model also contains a recycling loop as students in changeable situations are likely to re-assess their cost/benefit situation frequently.

2.15.2 Analysis of Kember's model

Although NVQ programmes lie somewhere between conventional taught part-time courses and open learning courses, Kember's model is a useful one in that it reinforces views on a number of influences on part-time student progress. In particular, Kember's interpretation of social integration and its relation to external attribution is important. As Kember puts it:

"Autopsy studies of student attrition solicit direct explanations from those who dropped out. Reasons given almost invariably cite some external cause of which "insufficient time" seems to be the most common. Such external attributions are understandable, given the framework provided by attribution theory. Those who are successful tend to accept credit by internalising responsibility for the successful outcome. By contrast less successful ventures are easier to accept if causation is attributed to something external to the control of the individual.

Lack of social integration is frequently manifest in the student resorting to external attribution. Failure to find ways to integrate study with on-going commitments means that it is easy to blame the competing work, family and social pressures for the lack of integration." *(Kember, 1995, p89)*

However, the twin track concept is limiting in that it does not cater for the student who may be able to integrate socially but not academically or vice versa. As

Pascarella and Terenzini (1991) observed, social and academic integration may compensate for each other.

Kember also seems to deliberately ignore the effect of personality and other individual qualities and attributes in his model despite discussing research in this field. He quotes for example the work of Kennedy and Powell (1976) who proposed a model that related the dropout process to both personal characteristics and circumstances. He also acknowledges the influence of personal characteristics by accepting that the pressure of adverse circumstances was more likely to lead to at-risk situations or dropout for students with 'weak characteristics' than it is for those with 'strong characteristics'. It seems somewhat surprising, therefore, that he does not seek to allow for these factors in his model.

The next section discusses research that attempts to combine factors from different models of student attrition.

2.16 Studies combining different models of attrition

It would seem that the predilection of researchers into attrition in the 1970s and 1980s to associate themselves with particular schools of thought, whether knowingly or not, resulted in models where the predictive power for student attrition was fairly limited.

"Overall, the 26 variables in the model accounted for 29% of the variance in dropout. This result compares favourably with other recent studies of student attrition" *(Metzner and Bean, 1987, p22)*

Other researchers, therefore, sought to combine models from different schools of thought in order to improve predictability by incorporating a wider range of variables (Braxton and Brier, 1989; Cabrera et al, 1992).

A study by Braxton and Brier (1989) sought to meld organisational theories and interactional theories by introducing organisational attributes such as institutional

communication, fairness in policy and rule enforcement and participation in decision making into Tinto's model. The findings provided mixed support for this approach.

"Although one or more of the three organisational attributes exerts the anticipated direct, positive effects on academic and social integration, none has an indirect influence on student persistence. In this case, is it profitable to alter interactionalist models to include organisational influences on student persistence? Perhaps not, but researchers should first systematically assess several alternative explanations (for this absence of indirect effects)" *(Braxton and Brier, 1989, p57)*

Cabrera et al (1992) had somewhat more success in combining Tinto's and Bean's models.

"Although several theories have been advanced to explain the college persistence process, the two theories that provide a more comprehensive theoretical framework on college departure decisions are Tinto's Student Integration Model (Tinto, 1975;1987;1993) and Bean's Model of Student Departures (Bean, 1980, 1983)."
(Cabrera et al, 1992, p143)

Recognising that a major gap in Tinto's theory and allied research was the role of external factors in shaping perceptions, commitments and preferences, Cabrera et al (1992) incorporated these variables into an expanded model.

"Unlike the Student Integration Model (of Tinto), the Student Attrition Model (of Bean) emphasises the role factors external to the institution play in affecting attitudes and decisions. Whereas the Student Integration Model regards academic performance as an indicator of academic integration, the Student Attrition Model regards college grades as an outcome variable resulting from social-psychological processes." *(Cabrera et al, 1992, p145)*

The degree of convergence between the two theories was tested on a sample of first year students enrolling in autumn, 1988, at a large south-western urban institution in the USA. Because the integration model deals with traditional students, only full-time, first time freshman under twenty-four years of age and not married were selected. The students were mailed a questionnaire in April 1989 containing 79 items and 466 usable replies were received, a response rate of 19%. Persistence was defined as those who re-enrolled the following year. Intent to persist was a measure of whether the student said in April that they were likely to re-enrol in the following September. The findings showed that:

"Both theories are correct in presuming that college persistence is the product of a complex set of interactions among personal and institutional factors."

"The Student Integration Model appears to be more robust than the Student Attrition Model when judged in terms of the number of hypotheses validated. The Student Attrition Model, however, accounts for more variance in both Intent to Persist (60.3% versus 36%) and Persistence (44% versus 38%), a finding that can be attributed to the significant effects of external factors in the form of Parental Encouragement and Support from Friends and Finances."

(Cabrera et al, 1992, p158)

The results of this research indicated that the two theories were not mutually exclusive; rather they were complementary to one another as far as the presumed role of organisational and students' commitments to the institution was concerned. This supports the view that the respective theories of attrition discussed in paragraph 2.12 each only reflect part of the overall picture.

" A more comprehensive understanding of the persistence process can be achieved when combining the two major theories of college persistence. A model integrating the leading factors in each theory may contribute to explain this process better."

(Cabrera et al, 1992, p60)

2.17 The influence of psychological and personality factors on persistence

Psychological models of student attrition dominated the literature for some time before Tinto's interactional model gave new theoretical direction to attrition research (Tinto, 1993; Ethington 1990). Whilst intellectual measures have been recognised as important predictors of college achievement (Heilbrun, 1965; Pascarella and Terenzini, 1991) other psychological factors have also been recognised as significant influences:

"Even with academic ability or intelligence taken into account, grades at the individual level are significantly influenced by such factors as personal motivation, organisation, study habits and quality of effort."

(Pascarella and Terenzini, 1991, p388)

Recent research shows that the attempt to link personality factors with course completion, albeit within a wider framework of influences, continues to be a fruitful line of enquiry (Zabel, 1995; Abdul-Rahman, 1994; Skean,1993). Zabel's doctoral research involved 101 students enrolled on correspondence courses at Texas Tech University. Participants completed the Myers Briggs Type Indicator instrument and discriminant analysis was used to assess differences between completers and non-completers. Significant differences in some personality factors were found between these two groups but the details have not been published.

Eccles (1983) proposed a general model of achievement behaviours that specified causal relationships between aptitude, socialisation, attitudinal factors and affective factors. Ethington (1990) tested this on a random sample of 500 students at the University of California. It was a longitudinal study of freshman entering in the autumn of 1971 with a follow up in the winter of 1980. She found that important influences on persistence included 'value placed on college attendance' and 'student goal aspirations'. She also found that 'prior achievement' had the strongest total effects on persistence of any of the variables in the model.

Thus there is significant evidence that personal characteristics and competencies do have an influence on student completion in a variety of different types of course. Factors identified include the competencies of personal motivation and organisation. Goal aspirations and value placed on college attendance also influence the strength of students' motivation.

Closer to home, Bossons (1988) studied the effects of personality factors on success on a distance learning programme at Henley Management College. This will be examined in more detail in the next section.

2.18 The effects of personality and studying style on the success of distance learning students

Bossons' (1988) research for her doctoral thesis at Henley Management College explored the effects of personality and studying style on the success of students on a Henley Distance Learning programme. She collected data on 102 participants on 'The Effective Manager', a non-qualification management course.

Bossons used two instruments to collect her data. One was the Cattell 16PF questionnaire, an established test of personality. The 16PF is made up from sixteen primary factors of personality and four secondary factors. The secondary factors are combinations of the primary factors that have been found to cluster as broader factors themselves. Appendix 7 lists the 16PF primary and secondary factors.

The second instrument was an 'Approaches to Studying" Questionnaire which was in two parts. The first part was based on a questionnaire developed at Lancaster University, which had been widely tested and validated on full-time undergraduate academic students (Entwistle and Ramsden, 1983). The second part was developed by Bossons for the purposes of her specific research project.

The Lancaster part of the Questionnaire identifies four main categories (or scales) of studying style made up from a number of sub-scales plus two additional independent sub-scales. These are as follows:

Reproducing Orientation: a high score on these sub-scales shows that a student intends to reproduce what (s)he is studying.

- Surface approach – high scores show that students are relying on rote learning
- Syllabus-boundness – high scores indicate an intention to restrict learning to the defined syllabus and specific tasks.
- Fear of failure – high scores indicate that a student lacks self-confidence and is anxiously aware of any assessment requirements.
- Improvidence – high scores mean that a student is not prepared to look for relationships between ideas and are fact-bound

Meaning Orientation: high scores show that students intend to understand what is being studied. This may also be referred to as a 'Deep Approach' to studying.

- Deep Approach – high scores show that students are looking for meaning in their studying, interacting actively with what is being learnt and linking what they are studying with real life.
- Use of Evidence – high scores indicate that students are examining evidence critically and using it cautiously.
- Relating Ideas – high scores show that students are actively relating new information to previous knowledge.
- Intrinsic Motivation – high scores mean that students are interested in what they are learning for its own sake.

Strategic Orientation: high scores indicated that students were studying in order to further their careers and saw the learning task as a game which they must win.

- Extrinsic Motivation – high scores mean that students see qualifications or career rewards as the main source of motivation for learning.
- Strategic Approach – high scores show that students are actively seeking information about assessment requirements and are trying to impress their superiors.
- Achievement Motivation – high scores indicate competitive and self-confident students who are driven by hope of success.

Non-Academic Orientation: high scores on these sub-scales indicate that students have little concern for academic requirements and are experiencing study difficulties linked to poor academic performance.

- Disorganised Study Methods – high scores show that students report that they have difficulties organising their time effectively and planning ahead.
- Negative Attitudes – high scores mean that students have little involvement with their work and are cynical and disenchanted about higher education or training courses.
- Globetrotting - high scores indicate that students are over-ready to generalise and jump to conclusions without evidence to support them.

The two additional sub-scales are 'Comprehension Learning' and 'Operation Learning'.

Comprehension learning - high scores show that students use illustrations, analogies and intuition to build up a general picture of what they are learning.

Operation learning - high scores indicate that students concentrate on details and logical analysis.

A summary of findings by Ramsden cited by Bossons (Ramsden, 1983; Ramsden and Entwistle, 1981), using his Approaches to Studying and Course Perceptions questionnaire on 2000 British undergraduate students showed that:

- Meaning orientation is consistently and positively associated with progress.
- Strategic orientation is consistently and positively associated with progress.
- Non-academic orientation is consistently and negatively associated with progress.
- Reproducing orientation is consistently and negatively associated with progress.

The distance learning specific part of the 'Approaches to Studying' Questionnaire asked questions related to the following areas.

- Success with the course
- Motivation for taking the course

- Interaction with others
- Support available to the student and whether this was used
- Learning Style - in terms of the tendency to adopt an holistic style (glancing through all the material and reading various sections first) or serialistic style (working through the material in order straight away).

The aim of Bossons' research was to provide users of distance learning management training materials with more information about how different types of people work on the courses. By analysing successful and unsuccessful students who had worked on such a course, she hoped that patterns would be identified which could be used for counselling of future students. It was hypothesised that certain studying styles would be more effective than others, and that certain personality characteristics would also result in a student being more or less successful. The main hypothesis of the research was that there would be links between personality traits and the adoption of successful studying practices.

It was not expected that predictive relationships would be established between the measured factors and success on the course because:

"there are too many confounding environmental and circumstantial factors surrounding a student to allow us to hope that 'all people with high scores on the G factor in the 16pf will be successful distance learners'". *(Bossons, 1988, p63)*

It was hoped, however, that general indications and various student types linked with success could be identified.

Perhaps because she was dealing with a non-qualification course, Bossons' measure of success was not course completion or final course grading. She also considered that trying to assess how far the actual teaching content of the course had improved the student's managerial performance was outside the scope of the research. Consequently, success was interpreted for the purpose of the study as meaning 'success with the course' as opposed to 'success on the course'. Thus the rating on the 'success' scale used was a measure of how well the individual worked using

distance learning techniques. The questions, therefore, looked at whether the student had any difficulties using the different media contained in the course, whether they felt that they had learnt the relevant teaching points at key points in the course, how well they could relate the new concepts to their job and so on. These were all areas that tested successful (or unsuccessful) use of the course. Nevertheless, one might expect that a more successful 'use' of the course would be linked with course completion and hence the findings are of interest to this thesis.

Bossons found no clear correlations between individual 16PF factors and success. However, certain combinations of personality and studying traits were important in determining how people coped with distance learning.

The factors that correlated **positively** with success were as follows.

Meaning Orientation: an interest in the subject matter for its own sake, an active and critical interaction with what is being learned and the relating of academic knowledge to personal experience and 'real life'. Meaning Orientation also correlated positively with a high G (conscientious) and high O (Apprehensive) on the 16PF factors (see Appendix 7).

Strategic Approach: an indication that students were studying in order to further their careers and saw the learning task as a game which they must win. Strategic Approach also correlated positively with a high A (Outgoing) on the 16PF.

Operation Learning: a factor indicating the extent to which students concentrate on details and logical analysis. On the 16PF it correlated positively with high G (Conscientious), high Q3 (Controlled) and low E (Humble).

Intrinsic Motivation: the degree to which students are interested in what they are learning for its own sake. Intrinsic Motivation again correlated positively with a high G (Conscientious) on the 16PF and with low F (Sober) for the full sample but, interestingly, additional and different factors were significant when male and female students were examined separately.

Use of Evidence: the degree to which students were examining evidence critically and using it cautiously. This factor correlated positively with a high G (Conscientious) on the 16PF and a low N (Forthright).

The factors that correlated **negatively** with success were as follows.

Disorganised Study Methods – where students had difficulty in organising their time effectively and in planning ahead. This correlated positively with low A (Reserved) and low C (Emotional) on the 16 PF.

Extrinsic Motivation – where the main source of motivation was to achieve qualifications or career rewards. This correlated positively with high F (Happy-go-lucky) and low A (Reserved).

Non-Academic Orientation – where students had little concern for academic requirements and were experiencing study difficulties linked to poor academic performance. This correlated positively with a high factor 2 (Anxiety) on the 16PF, low A (Reserved) and high I (Tenderminded).

2.19 Analysis of Bossons' research on distance learning courses

The significance of Bossons' findings for this thesis is that it does demonstrate a link between personal characteristics and progress with the course. Although the measure of success that Bossons used is different from course completion as used in this research, it is reasonable to suppose that success with the course will result in a higher likelihood of completion. Thus it may be expected that personal characteristics will also have an influence on completion for NVQ programmes.

More particularly, some of the factors that Bossons found to correlate positively or negatively with success, such as strategic approach, motivation and disorganised study methods are similar to some SHL competency competencies. This therefore provides further support for the hypothesis that certain personal competencies will have a significant influence on completion in NVQ courses.

The research of both Bossons and Kember was based on distance learning programmes and there are significant differences between these and NVQ courses. A key difference is in the focus on learning in the distance learning programme compared with the NVQ which is more assessment driven. There are also, however, sufficient similarities in terms of the part-time nature of the students, the influence of external factors and the need to juggle course requirements with domestic and work requirements to make their work of some relevance to this research.

Although not a key aim of her research, Bossons identified the issue of support given in the work environment as a major concern to students. This was based on questionnaire responses and from interviews with the students. The support required was of the moral support type rather than any tangible organising and the most commonly reported problem related to the student's own boss. If the boss was negative towards the training course, this could have a very destructive effect on the student's motivation. Bossons linked this back to personal characteristics arguing that it depended on the person's personality as to how well they stood up to comments and criticism. In this respect, NVQ participants are in the same position as open learning students and the issue of support from the organisation will equally apply.

Bossons also found a relationship between studying styles and success. However, there is a key difference between the focus on learning in the Henley open learning programme and the NVQ course. A key aim of the Henley programme is to enable students to learn. Hence a student's studying style is directly relevant to the learning process. The focus of the NVQ programme is on assessment with learning taking place in a wide variety of ways, not all within the control of the Business School. Nevertheless, the fact that studying style was a significant influence on success in open learning programmes suggests that this issue is worthy of further exploration when studying completion rates on NVQ courses. Furthermore, the factor of 'disorganised study methods' relates to the difficulty that some students have in organising their time and planning ahead. In view of the flexibility of the programme, t his factor is also likely to be important for NVQ participants.

2.20 Attrition and mature students in Further and Higher Education

McGivney conducted a short research project between March and September 1995 involving a study of the attendance and withdrawal patterns of mature students in further and higher education (McGivney, 1996). The work was funded by the former Employment Department. The aims of the project were:

- to examine the extent of and reasons for mature student delayed completion and withdrawal from adult, further and higher education courses and programmes of study
- to identify factors leading to withdrawal from courses and programmes of study
- to identify student groups and subject areas particularly susceptible to high withdrawal rates
- to identify measures that might improve retention and completion rates
- to examine the implications of changing patterns of participation for institutions and funding bodies.

The project adopted a largely qualitative approach, involving:

- a literature search
- a consultation meeting with representatives from adult further and higher education
- a postal survey of a small sample of further and higher education institutions
- contact with a sample of Access Validating Agencies
- correspondence and telephone contact with researchers and practitioners with a known interest in retention and non-completion issues.

"The main task of the project was to try to clarify the extent, nature and causes of early withdrawal from programmes of study. *(McGivney, 1996, p21)*

McGivney found that there was a tendency to categorise all withdrawals as dropouts and consequently to adopt a negative view of these. It was pointed out however that, as discussed earlier, some withdrawals were for positive reasons. These may be transferring to another course, leaving to take up employment or because the student has acquired what they wanted from the course.

McGivney's research covered mature students on a wide range of full and part-time courses. Mature students were defined as anyone over the age of 21years. However she did include some comments on part-time higher education students who she found experienced particular difficulties arising from the pressures involved in trying to combine study with outside commitments, particularly employment.

"The pressures produced by travel and all the other problems of fitting in part-time study alongside employment and/or other activities and responsibilities are, of course, considerable, far in excess of anything adolescent students have to face. Most part-time students freely admit to having seriously considered dropping out on at least one occasion and many do so" *(Tight, 1987 in McGivney, 1996, p100).*

"Part-time students, especially those taking more than one course, experienced many competing demands on their time and particularly work pressures"
(Munn et al., 1992, in McGivney, 1996, p101).

According to McGivney, a study at Liverpool John Moores University identified work commitments as a significant contributory factor in the case of 59 per cent of non-completing part-time students. Personal reasons such as family commitments, medical advice, maternity leave, childcare problems, changes in employment status and stresses experienced while studying were also mentioned.

Many adult learners left part-time programmes at the University of Exeter largely because of external pressures such as work, domestic and family commitments, and financial, health and transport problems. A significant number also said that courses did not live up to their expectations. About a third were unprepared for the work involved.

According to Bond (1988), there is substantial evidence that mature students leave courses mainly for 'facts of life' reasons. McGivney also quotes Herrick's (1986) conclusions that:

"the totality of research on mature student withdrawal shows the vulnerability of adult education to external factors" (McGivney, 1996, p110).

Bond (1988) conducted a national survey of the progress and performance of students taking a part-time Diploma in Management Studies covering 1072 students that either completed or left the course early. When comparing the characteristics of successful and unsuccessful students he found that there was little difference in factors such as age at entry, sex, previous educational qualifications, previous study of management, management experience or level of management responsibility. He concluded:

i) that it is difficult for tutors to anticipate, from a knowledge of an applicant's current job, whether he will be able to complete the course successfully;
ii) that students' perceptions of the effects of pressure of work on their progress with the DMS is a personal factor which is not explained (taking the group as a whole) by measurable differences between their jobs and the jobs of students who remain on the course. Common experience, in any case, suggests that students respond to, and cope with, such pressures in different ways, and a student who is under pressure at work does not seem to be at significantly greater risk of leaving the course.

(Bond, 1988, p18)

An analysis of those who left the course distinguished four broad factors likely to explain why students left the course early. The questionnaire included a list of typical reasons for leaving and respondents were asked to tick the ones applicable to them. The results were as follows.

Job related reasons	46% of factors mentioned
Personal circumstances	22% of factors mentioned
Reasons related to the course	20% of factors mentioned
Academic problems and failure	13% of factors mentioned

The study showed that by the beginning of the second year, 18 per cent of students had left, 12 per cent of them in the first term because the course was considered unsuitable or did not meet expectations. Eleven per cent left during the second year (Bond, 1988).

These studies emphasise the importance of external factors on completion for mature part-time students in the UK. Such influences include work pressures, domestic and family commitments, financial, health and transport problems. However, they do not explain why it is that some students are able to cope with these pressures and complete their course successfully whereas others fall by the wayside.

2.21 Summary analysis of studies on student attrition

It is clear from the review of previous studies in this chapter, that factors affecting non-completion will vary for different types of student and different types of course. Even within a given course at a particular institution, students leave for very different reasons (Bean, 1980). Much of the earlier research (Summerskill, 1962; Tinto, 1975; Astin, 1975; Pantages and Creedon, 1978), was carried out in North American universities with full time, residential students on under-graduate programmes. Thus the aspect of integration, both academically and socially into university life was a key influence on completion in a range of models (Tinto, 1975; Pascarella and Chapman, 1983; Pascarella and Terenzini, 1991). In the USA, Metzner and Bean (1987) showed, however, that non-traditional students (defined as non-residential, over 24 years old or part-time) are not greatly influenced by the social environment of the institution. Environmental factors such as outside support, hours of employment and family responsibilities were a greater influence for these students than in interactional theories such as Tinto's. In the UK, Kennedy and Powell (1976) also demonstrated the influence of external factors in their study of distance learning students at the Open University. This is further supported by the research of Bond (1988), Munn et al. (1992) and McGivney (1996),

Many of the earlier studies tended to focus on trying to find a causal link between a limited number of factors and non-completion reflecting particular schools of thought on attrition, such as the psychological, sociological or interactional approaches. Bean declared this as a serious weakness of many studies.

"Most studies ignore major bodies of literature and thus are not inclusive in their coverage of the determinants of student attrition." *(Bean, 1980, p156)*

However, from the analysis of the wider range of studies discussed in this chapter, it is clear that there are two broad categories of influence that must be included in any model seeking to explain non-completion for part time students. These two categories are the individual characteristics of the student and the external influences or circumstances to which he/she are exposed.

The effect of external influences on part-time students has been identified in studies by Metzner and Bean (1987), Cabrera et al. (1992) and McGivney (1996). From Cabrera et al:

"The findings suggest that institutional researchers ... consider the interplay between institutional, personal and external factors when developing and assessing programmes aimed at preventing college attrition." *(Cabrera et al, 1992)*

Kennedy and Powell (1976) also stressed the importance of both personal characteristics and external influences following their empirical research on students at the Open University. As quoted earlier:

"It became clear from our investigations that account must be taken of two general aspects of the phenomenon of dropout: the 'characteristics' of students and their circumstances."

(Kennedy & Powell, 1976, p62)

They point out that characteristics are either constant (e.g. previous educational background) or subject to slow change (e.g. personality, motivation). On the other hand, circumstances may be subject to rapid change (e.g. change of job or redundancy). One may also identify both strong and weak characteristics at the same time in the same student and his/her performance will be determined by which characteristics dominate at a particular time and in given circumstances. A person entering a course with strong characteristics in terms of previous educational background but with weaker characteristics in terms of motivation may withdraw in the face of adverse circumstances such as domestic problems or increased job pressures. However, a person with low educational attainment on entry, a monotonous job or an unsympathetic peer group may be highly motivated in that he

sees the course as a means of self-improvement. He/she may well persevere in the face of great difficulties.

Certain personal competencies have been shown to correlate significantly with work performance in a number of research studies. Cockerill's (1989) study of senior managers in a large financial services organisation showed a significant relationship between Schroder's high performance competencies and work performance. Nyfield et al. (1995) in a study across three countries found a significant relationship between certain competencies in the Saville and Holdsworth model and work performance. Dulewicz and Herbert (1992, 1999) found a significant relationship between competencies and management advancement in a seven year longitudinal study of managers' progress to senior management.

The majority of studies exploring the relationship between personality factors and work performance have been less successful in demonstrating a significant relationship. Barrick and Mount (1991) argued that one of the reasons for this was that there was no well-accepted taxonomy for classifying personality traits. Using the 'Big Five' personality factors they did find that Conscientiousness was a valid predictor of job performance across all occupational groups and that Extraversion was a valid predictor for managers and salespersons. However, competencies do seem to be a more reliable predictor of job performance (Dulewicz and Herbert, 1999) and do, of course, embrace personality factors (Nyfield et al., 1995).

Thus if particular competencies are predictors of work performance, it is reasonable to suppose that specific competencies may also be a predictor of performance on a course. Certainly Boyatzis (1982) argued that, since competences are generic, they may be considered to apply to a wide range of situations. Although the influence of personal characteristics is ignored or minimised as having only indirect effects by some (Tinto,1975,1993; Kember, 1995), other studies demonstrate that individual characteristics can be a direct and significant influence on completion (Heilbrun, 1965; Pascarella and Terenzini, 1991; Bossons, 1988; Zabel, 1995). In view of the relationship between personality factors and competencies as demonstrated by Nyfield et al. (1995), these studies would seem to support the validity of research exploring the link between competencies and completion.

However, one of the particular 'circumstances' relating to students is that of the approach to learning reflected in the course. Various researchers have shown that people have different learning styles that influence the way they learn (Pask and Scott, 1972; Entwistle et al., 1979; Kolb, 1991). Honey and Mumford (1992) showed that people with different learning styles learn better from different kinds of learning activity. In his research with full time undergraduate students, Tinto emphasised the importance of academic integration in relation to course completion and this was also included in Kember's model for distance learning students. The concept of academic integration, which includes wider interactions with faculty, has however been shown to be of less significance for part time students (Metzner and Bean, 1987). Nevertheless, the more specific issue of learning style remains a factor of possible significance in relation to a student's perseverance with his/her course.

Studies of student attrition which simply produce lists of reasons why students drop out (Astin, 1975) do not explain why some students overcome such difficulties and others succumb to the pressures. The concepts of attribution and locus of control would also cause us to question the validity of the reasons given for leaving. This particularly applies to part time students in relation to the most commonly identified problem of work pressure as a reason for leaving the course (Bond, 1988).

This chapter has reviewed the significant theories and research studies that have influenced the direction of research adopted in this research study. The issues reviewed provide the basis for the analysis of influences on completion for NVQ participants and these will be explored further in Chapter 3.

CHAPTER 3: INFLUENCES ON COMPLETION FOR NVQ COURSES AND CONSEQUENT HYPOTHESES

3.1 Personal characteristics and external influences

The analysis of previous research in Chapter 2 showed that there are two broad categories of influence that must be included in any model seeking to explain non-completion for part-time students. These two categories are the individual characteristics or competencies of the student and the external influences or circumstances to which he/she is exposed.

The personal characteristics of students, such as motivation and goal orientation, act as the driving forces that stimulate the student to work through to completion of the course. Along the way, he/she is exposed to various external influences that will either support or distract him/her. Tinto (1993, p85) refers to the 'matrix of forces' which impinge on the withdrawal process. A parallel may be drawn here with the 'driving' and 'resisting' forces in Lewin's concept of Force Field Analysis (Lewin, 1958). Kennedy and Powell also refer to the balancing act that a student faces with opposing pressures and demands.

"While all students are faced with the task of performing a balancing act with opposing pressures and demands on their time and energy, some students (i.e. those with weaker characteristics) are more vulnerable than others. By and large the stronger the characteristics of a student, the more unlikely an increase in pressure will upset his equilibrium." *(Kennedy and Powell, 1976, p70)*

Thus the interplay between these two categories of influence may be illustrated as in Figure 3.1.

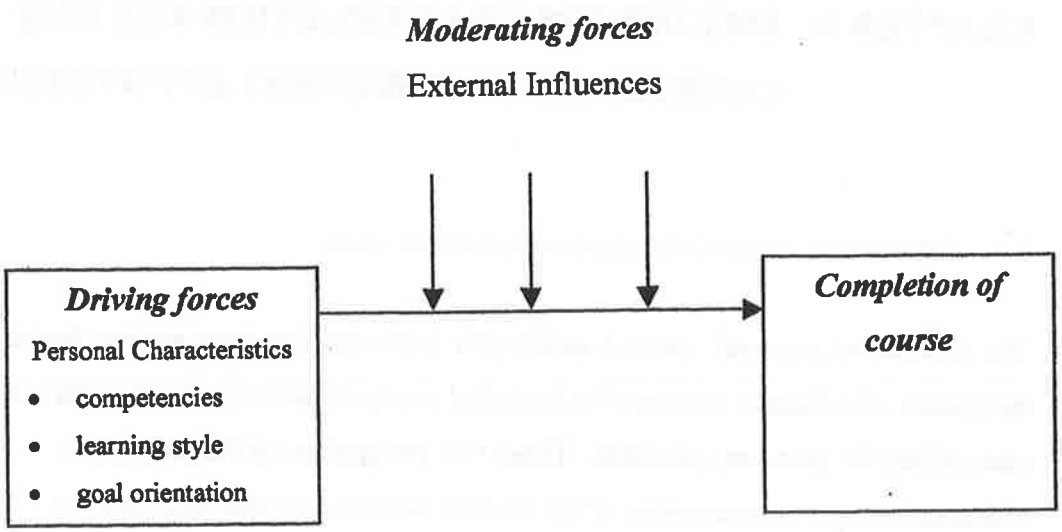

Figure 3.1 The relationship between personal characteristics and external influences

3.2 Influences on completion for NVQ programmes and hypotheses

3.2.1 The nature of the NVQ course in management

The purpose of this research is to develop and test a model of influences on student completion for NVQ programmes in management with particular reference to the effect of personal attributes and competencies. NVQ programmes in management are different in kind from traditional academic programmes of study and are also relatively new, the first programmes being introduced in 1991. A significant part of the process is the building of a portfolio of work-based evidence of competence. Whilst learning and development remains an important aspect there is no programme of lectures and associated assignments or examinations to complete. Off the job learning is acquired through short modules of the student's own choice and these are generally external to the Business School. Work-based learning is also a significant element with participants reflecting on their own ways of working and using the Management Standards as a guide to good working practice.

The analysis of previous research and theories on student attrition in Chapter 2 contributes to our understanding of the influences on completion for NVQ courses and has influenced the direction of this research study. However, the relatively recent introduction of these programmes and the fact that they are different in kind

from traditional taught courses means that previous research is not directly applicable. Tinto's (1993) model relates to full time, residential undergraduate students. Metzner and Bean (1987) developed Tinto's model for part time students but this still applies to conventional academic courses. Kember (1995) also built on Tinto's work and proposed and tested a model for distance learning students but ignored personal attributes. Bossons (1988) showed the importance of these in her research, also with open learning students. Hence a new model is needed.

3.2.2 Hypotheses for External Influences

Flexibility of submission dates for coursework

A key difference between NVQ programmes at the Business School and most other courses studied is in the flexibility of submission dates for submission of their portfolio – the equivalent to course work on a conventional programme. This flexibility was originally considered to be a strength of the programme in that it allowed students to plan their activity to fit in with other competing pressures on their time. Experience shows this to be a 'double-edged sword'. The negative aspect is that it can allow the student to procrastinate. There are always other pressures at work and home and the easy option is to delay work on the portfolio. The more that the coursework is delayed, the harder it is to regain the momentum. In the taught Diploma in Management Studies (DMS) course deadlines for submission of coursework are more strictly enforced and these are generally met despite job pressures.

As discussed in paragraph 2.8.3, a similar situation was experienced with students on an open learning MBA at Henley Management College (Birchall and Pollack, 1992). In the initial programme, a significant freedom of choice was given to participants. It was found, however, that this was counter-productive to programme completion and greater structure was subsequently introduced.

It is apparent that flexibility of dates for submission of coursework is a factor in completion. This leads us to the following hypothesis.

Hypothesis 1 – Flexibility in submission dates

H_1: Less Flexibility in submission dates for assessed work has a positive effect on completion.

Degree of employer support

Metzner and Bean (1987) showed that both external encouragement and the student's perception of the value of the course were important factors on completion for part-time students. Support and recognition from the student's line manager and/or the employing organisation are key influences on these two variables. This factor is supported by Miller (1991) who commented on research in a technical college in the mid-west of the USA as follows:

"Measured by student responses to questions about support from family and employer, extra-institutional integration was found to be important in the decision to stay in the programme... while social integration had limited influence on the decision to persist." *(Miller, 1991)*

Kember (1995) in his study of distance learning students also substantiated the importance of this factor:

"Students who receive support and encouragement from family, friends and employers, which enables them to cope with study in the home, find it easier to come to terms with their academic demands." *(Kember, 1995)*

Experience with the NVQ programme showed that participants categorised encouragement from their employer in two ways – support from their line manager and support from the organisation generally. Their immediate point of contact with the organisation is their line manager. Since he/she has a significant influence on their progress in the company, their views are taken seriously. Bossons (1988) in her study of open learning students at Henley also found that the most commonly reported problem relating to support was with the student's own boss. If the boss was negative towards the training course then this could have a very destructive effect on the student's motivation.

According to Noe (1986), from his analysis of trainee's attributes and attitudes:

"The influence of the work environment on trainability is another factor that should not be ignored. Of particular importance are the climate of the organisation concerning change and the extent to which the social context (supervisors, co-workers) of the work setting provides reinforcement and feedback." *(Noe, 1986, p737)*

One step removed from the immediate support of the line manager is that of support from the organisation more generally. This may manifest itself in terms of support from the Personnel and Training Department, which is often reflected in financial support and time off for study. In his research on DMS students, Bond (1988) assessed employer support in terms of financial support for fees, books and travelling and time off for weekly classes, residential periods and study leave. A significant proportion of the participants on the NVQ programme registered as part of a company-based programme and might therefore be expected to be receiving full support from their organisation. This, however, does not necessarily mean that participants believe that they have the full support from the organisation as a whole. In some cases they simply perceive it as a Training Department initiative.

It is important therefore to explore the participants' perception of the level of support from their employer, as this is a significant external influence on completion. Thus we have the following hypotheses.

Hypothesis 2 – Degree of Support

$H_{2.1}$: A higher Degree of Support from the organisation has a positive effect on completion.

$H_{2.2}$: A higher Degree of Support from the participant's line manager has a positive effect on completion.

The level of employer support will be assessed through four items:

- financial support from employer for fees, books etc.

- time allowed off work for study
- degree of line manager support
- degree of support from organisation generally.

Workload

The biggest single reason given by students for not submitting the required evidence to complete their NVQ units was pressure of work. Metzner and Bean (1987) did find that hours of employment had a significant effect on 'intent to leave' for part-time students. Tight (1987), Munn et al. (1992) and McGivney (1996) in their studies all recognised the particular pressures that part-time students are under to balance course and work commitments.

This would not seem to explain, however, why there is a difference between NVQ programmes and taught DMS courses as both groups draw on a wide spread of managers from a variety of organisations. As Bond (1988) noted, differences in progress on the taught DMS were not explained by measurable differences between their jobs. Kember (1995) also showed that failure to find ways to integrate study with on-going commitments means that it is easy to blame the competing work, family and social pressures for the lack of integration. This tendency is reflected in the concept of locus of control and attribution theory discussed in Chapter 2, paragraph 2.8.2. Those with a more external locus of control will tend to blame external factors such as workload for their lack of progress.

On closer examination, an alternative explanation may be that certain managers are attracted to NVQ programmes because work pressures prevent them from taking the traditional part-time route. They start the programme in the expectation that they will be able to cope with the reduced demands of the competence based route but find, in reality, that this is also too much for them.

It is important therefore to test the effect of this variable through the following hypothesis.

Hypothesis 3 – Workload

H_3: A high Workload has a negative effect on completion.

This factor will be measured by one item:

- student's rating of workload during the course.

Perceived importance of NVQs and management qualifications

In Metzner and Bean's (1987) study , 'Intent to Leave' was significantly influenced by psychological variables such as the student's perception of the value of the course. Ethington (1990) in her study of 500 students at the University of California found that 'value placed on college attendance' was an important influence on persistence. This is particularly relevant to NVQ programmes because the value of NVQ qualifications is not yet as well recognised as the much longer established taught programmes. In one early cohort at the Business School, a manager was reported to have said to one participant that 'he didn't know why he was doing the course because that qualification won't do you any good in this company'. This quickly went round the group, who were all from the same company, and it resulted in a significant de-motivating effect.

This does, of course, depend on the participants' reasons for taking the course. If he/she sees the course as a means of helping him/her to leave the company and pursue a career elsewhere, then they will be less influenced by the organisation's perception of NVQs. Their own perception of the value of the qualification outside the organisation will be more influential. However, if they see their career as developing with their current employer they are likely to be more influenced by the perceptions of the organisation. In either case, one would expect their motivation to be reinforced if both they and their employer believe in the value of the programme.

As NVQs were still relatively new at the time of the fieldwork, it was anticipated that some organisations would not have formed a view on their value. In such cases, a more indirect influence would be the attitude of the

organisation to management qualifications in general. Thus we have the following hypotheses.

Hypothesis 4 – Perception of Qualifications

$H_{4.1}$: A positive perception of NVQs by the participant will have a positive effect on completion.

$H_{4.2}$: A positive perception of NVQs by the organisation will have a positive effect on completion.

$H_{4.3}$: A positive perception of management qualifications by the organisation will have a positive effect on completion.

The assessment of participants' perceptions of the importance of NVQ qualifications is made up from four items.

- Student's perception of current importance of NVQ qualifications
- Student's perception of future importance of NVQ qualifications
- Student's perception of organisation's view of NVQ qualifications
- Student's perception of organisation's view of management qualifications generally.

Again, as NVQs were relatively new, it was considered important to distinguish between participants' current perception of their importance and how they saw this changing in the future. In some cases, participants felt that they were not widely recognised at the time but would become of increasing importance in the future.

3.2.3 Personal characteristics and attributes

Although Tinto (1993), Kember (1995) and others have ignored the effect of personal characteristics on completion, it is evident from the research discussed earlier that this factor is of significant importance (Heilbrun, 1965; Bossons, 1988; Pascarella and Terenzeni, 1991 etc). Even Kember acknowledged this issue when saying that students with 'weak' characteristics are more likely to drop out when faced with adverse circumstances than those with 'strong' characteristics.

This factor is considered to be of particular interest in relation to NVQ courses because the NVQ approach puts more onus on individuals to set their own progress targets and to work to them. Some people are better able to do this. They plan and organise their time so as to meet both course and work requirements. Others are submerged by their work and find it difficult to cope with the competing pressures.

The primary aim of this research is to explore the personal attributes or competencies associated with completion and non-completion of the NVQ 4/5 programme in management. What are 'weak' characteristics as opposed to 'strong' ones. Bossons (1988) found that personality factors and learning style did have an influence on success in a distance learning programme. She also noted that personality affects how well students stand up to external comments and criticism (for example, from their line manager). Other studies (Cockerill, 1989; Nyfield et al., 1995) have shown a significant relationship between competencies and job performance and Barrick and Mount found that the personality factors of Conscientiousness and Extraversion were also related to the job performance of managers.

It is therefore hypothesised that successful participants on the NVQ course will demonstrate a significantly different profile of personal characteristics from those of unsuccessful participants. These will now be discussed in more detail in relation to the underpinning theory.

Initial Goal orientation

Most of the models of student attrition include the factor of goal orientation or commitment. This is a measure of the importance that the student attaches to the achievement of the degree or qualification at the end of the course (Metzner and Bean, 1987; Ethington, 1990; Cabrera et al. 1992; Tinto1993; Kember, 1995). This is obviously a key factor in the motivation for initially enrolling on the course and for continuing to completion. Kember distinguishes between intrinsic and extrinsic motivation. Intrinsic motivation is where the student derives satisfaction from the learning process and the course content itself. Extrinsic motivation is where the student is doing the course just for the qualification or in order to get the chance of a better job afterwards. According

to Kember's research, intrinsic motivation is more likely to lead to persistence than extrinsic motivation.

A key aspect of the NVQ programme is its focus on performance at work. An important objective of training managers when negotiating a new programme was to enable managers to compare their performance against the Management Standards as a guide to good working practice. Thus the improvement of work performance is an important issue. If participants recognise that the NVQ course is work-focused and will lead to improved performance and if they identify with this objective, this is likely to lead to increased intrinsic motivation.

In his survey of DMS students, Bond (1988) found that the objectives that students rated most highly were 'to increase the range of jobs open to me' and 'to get a recognised qualification'. This reflects a higher degree of extrinsic motivation. Whilst these objectives would also be expected to apply to NVQ participants, it is anticipated that improvement of work performance would also be a significant objective.

As participants who have intrinsic motivation are more likely to persist than those who are extrinsically motivated, it is expected that the kind of objective for taking the course will have an influence on completion. The objective 'to improve job performance' is more allied to intrinsic motivation because it represents a deeper interest in the job itself and in learning that is related to that job. This leads to the following hypothesis.

Hypothesis 5 – Initial Goal Orientation

H_5: Successful candidates are more likely to indicate that their principal objective for taking the course was 'to improve job performance'.

Thus participants were asked to identify their principal reason for taking the course as one of the following options:

- to achieve a qualification in management
- to improve chances of career progression
- to improve job performance
- other reasons.

Learning Style

The different ways that people learn was discussed in paragraphs 2.7 and 2.8. If people learn better from different kinds of activities (Honey and Mumford, 1992) and in different ways (Kolb, 1991) it is reasonable to expect that the kinds of activity required on the NVQ programme will suit some learning styles better than others (Boggon, 1997). Neumann and Finaly-Neumann's (1989) research showed that 'Quality of Learning Experience' was a predictor of persistence for 3rd and 4th year undergraduates. Porteus (1997) suggested that a mismatch between mode of delivery on a training programme and an individual's learning style could be one cause of dropping out.

In a study of retention strategies in Further Education colleges, Martinez (1997) found that some colleges had identified significant improvements in learning outcomes following the diagnosis of students' learning styles and strategies. The diagnosis was used to build on particular strengths of given learning styles and to develop teacher awareness of learning styles in order to change teaching strategies accordingly.

Honey and Mumford (1992) developed the Learning Styles Questionnaire to identify individual learning style and explored how people with different learning styles learned better from different kinds of learning activity. Both Kember (1995) and Bossons (1988) showed that the student's approach to learning and studying on distance learning programmes was a contributory factor to success. Furthermore, Boggon (1997) went so far as to suggest that, based on his observations, reflector/theorists seem to find the portfolio method of presenting evidence for assessment more to their liking than do pragmatist/activists.

Thus it is considered important to check for any correlation between dropout and individual learning style. This leads to the following hypothesis.

Hypothesis 6 – Learning Styles

H_6: The learning style of successful candidates will be significantly different from those that fail to make significant progress.

The learning style of participants was assessed using Honey and Mumford's Learning Styles Questionnaire and this is discussed more fully in the next chapter, paragraph 4.3.3.

Personal characteristics and competencies

Whilst it is clear from the review of previous research that personal characteristics do have an influence on course completion, it is less clear what the nature of those characteristics are. Bossons (1988) used the 16PF test to explore relationships between personality factors and success. She found no clear correlations between individual 16PF factors and success but did identify that certain combinations of personality and studying traits were important in determining how people coped with distance learning.

In a study of over two thousand undergraduate students at the University of Iowa, Heilbrun (1965), found that:

"Personality makes an important systematic contribution to college attrition for high ability students only; for such students, passivity and task-oriented behaviours allow for a conformance with institutional values and decrease the probability of early discontinuance of their college attendance." *(Heilbrun, 1965, p4)*

The concept of competency suggests a more fruitful line of enquiry. It is a broader concept than personality alone, incorporating as it does the characteristics of motives, traits, skills, self-image and body of knowledge (see paragraph 2.3). As discussed in paragraph 2.6.2, competencies have been shown to have a more direct effect on performance than personality factors in a wide variety of situations.

The Inventory of Management Competencies (IMC) gives a profile for each participant against a list of sixteen competencies as shown in Appendix 8 (See Chapter 4, paragraph 4.3.4 for a full description of this instrument). Some of these competencies are more relevant to completion of the NVQ course than others. In relation to completion, therefore, the competencies may be divided into three groups:

- Competencies with a clear relevance to completion
- Competencies with a possible relevance to completion
- Competencies with no obvious relevance to completion.

Competencies with a clear relevance to completion

As previously discussed, the flexible nature of the NVQ programme appears to demand a higher level of personal motivation and drive in order to complete. Balancing work pressures and course work necessitates the ability to maintain effort in the face of conflicting requirements and priorities. The readiness to work hard and put in the extra effort required to complete the coursework whilst maintaining performance at work requires a high degree of personal motivation and organisation. It is therefore hypothesised that Action Orientation and Personal Motivation will be significantly related to completion.

Bossons' research (1988) showed that disorganised study methods correlated with lack of success on a distance learning course. The more flexible nature of the NVQ programmes is similar to that of a distance learning course and hence good planning and organising skills may be expected to figure in successful participants. Thus the competency of Planning and Organising is hypothesised as being significantly related to completion. Also, Bossons found that 'Strategic Approach' correlated with success and hence the Strategic competency on the IMC is included as having a likely relevance to completion.

Participants on the NVQ programme will experience a variety of pressures and setbacks, either arising from the course itself or from outside pressures of work or family life. Thus it is hypothesised that successful participants will score

more highly in the competencies of Resilience and Flexibility than those who do not complete, thus reflecting their ability to overcome obstacles and maintain progress.

Of the sixteen IMC competencies, the six competencies hypothesised as having a clear relevance to completion are therefore as follows:

- Planning & Organising
- Action Orientation
- Strategic
- Flexibility
- Resilience
- Personal Motivation.

This leads to the following hypotheses.

Hypothesis 7 – Planning and Organising

H_7: Participants who have completed will have a higher score for the competency of Planning and Organising.

Hypothesis 8 – Action Orientation

H_8: Participants who have completed will have a higher score for the competency of Action Orientation.

Hypothesis 9 - Strategic

H_9: Participants who have completed will have a higher score on the Strategic competency.

Hypothesis 10 - Flexibility

H_{10}: Participants who have completed will have a higher score for the competency of Flexibility.

Hypothesis 11 - Resilience

H_{11}: Participants who have completed will have a higher score for the competency of Resilience.

Hypothesis 12 – Personal Motivation

H_{12}: Participants who have completed will have a higher score for the competency of Personal Motivation.

Competencies with a possible relevance to completion

Five further competencies have a possible link with completion. These are:

- Leadership
- Quality Orientation
- Problem Solving and Analysis
- Written Communication
- Interpersonal Sensitivity.

The competency of Leadership is concerned with motivating others in order to reach organisation goals. Since competencies are considered to be generic (Boyatzis, 1982: Schroder, 1989) this focus on goal achievement is therefore likely to extend to other activities of participants with this competency. Goal orientation has already been shown to be an important element in models of student attrition and it is therefore feasible that the competence of Leadership will be related to completion.

Quality Orientation is also concerned with showing awareness of goals and standards, but in this case, following through to ensure that quality and productivity standards are met. Whilst this is measured in a work context, the same competency may, again, apply to goals on the NVQ course and follow through to completion. The competency of Problem Solving and Analysis arises because the work-based nature of the NVQ programme means that participants have to continually analyse the management standards and decide how they can acquire and present the relevant information.

The need for the competency Written Communication would appear to be less on NVQ programmes than for the taught DMS course where completion rates are higher and where longer 'essay type' assignments are required. However,

some NVQ participants found great difficulty in putting pen to paper at all and seemed unable to write the personal report for the first unit. Thus this competency may have some relevance. Finally, relationships with the course group and with others seemed to affect people in different ways. Some people succeeded in spite of an unsupportive group whereas others were significantly demotivated by the attitude of the others. It is hypothesised, therefore, that these five competencies have a possible link with completion.

Hypothesis 13 – Leadership

H_{13}: Participants who have completed will have a higher score for the competency of Leadership.

Hypothesis 14 – Quality Orientation

H_{14}: Participants who have completed will have a higher score for the competency of Quality Orientation.

Hypothesis 15 – Problem Solving & Analysis

H_{15}: Participants who have completed will have a higher score for the competency of Problem Solving & Analysis.

Hypothesis 16 – Written Communication

H_{16}: Participants who have completed will have a higher score for the competency of Written Communication.

Hypothesis 17 – Interpersonal Sensitivity

H_{17}: Participants who have completed will have a higher score for the competency of Interpersonal Sensitivity.

Competencies with no perceived relevance to completion

The remaining five competencies have no obvious relevance to completion and, for the sake of completeness, a null hypothesis is presented in each case.

Hypothesis 18 – Competencies with no perceived relevance to completion

$H_{18.1}$: There will be no significant difference in the scores for Persuasiveness between successful candidates and those that did not complete.

$H_{18.2}$: There will be no significant difference in the scores for Specialist Knowledge between successful candidates and those that did not complete.

$H_{18.3}$: There will be no significant difference in the scores for Oral Communication between successful candidates and those that did not complete.

$H_{18.4}$: There will be no significant difference in the scores for Commercial Awareness between successful candidates and those that did not complete.

$H_{18.5}$: There will be no significant difference in the scores for Creativity and Innovation between successful candidates and those that did not complete.

Factors not included in this analysis which have figured in other studies include 'academic performance' and 'social integration'. In both Tinto's (1993) and Metzner and Bean's (1987) research, academic performance was found to be of significance in predicting non-completion. Since this is not tested in the same way on the NVQ course, this variable is not relevant to the development of the model for NVQ programmes. Social integration has been shown by various studies (e.g. Metzner and Bean, 1987; Miller, 1991) to be of little relevance to predicting attrition for part-time students and is therefore also excluded.

3.3 Summary of Hypotheses

This chapter has presented an initial model of influences on completion rates for NVQ programmes in management based on the literature review in Chapter 2. The factors in the model include individual attributes and competencies, learning styles and external influences which may be classified into two broad groups of influences:

- Driving forces – personal characteristics
- Moderating forces – external influences.

A series of hypotheses have been identified which will be tested by the research study and these are summarised below.

Moderating Forces

Hypothesis 1 – Flexibility in submission dates

H_1: Less Flexibility in submission dates for assessed work has a positive effect on completion.

Hypothesis 2 – Degree of Support

$H_{2.1}$: A higher Degree of Support from the organisation has a positive effect on completion.

$H_{2.2}$: A higher Degree of Support from the participant's line manager has a positive effect on completion.

Hypothesis 3 – Workload

H_3: A high Workload has a negative effect on completion.

Hypothesis 4 – Perception of Qualifications

$H_{4.1}$: A positive perception of NVQs by the participant will have a positive effect on completion.

$H_{4.2}$: A positive perception of NVQs by the organisation will have a positive effect on completion.

$H_{4.3}$: A positive perception of management qualifications by the organisation will have a positive effect on completion.

Driving Forces

Hypothesis 5 – Initial Goal Orientation

H_5: Successful candidates are more likely to indicate that their principal objective for taking the course was 'to improve job performance'.

Hypothesis 6 – Learning Styles

H_6: The learning style of successful candidates will be significantly different from those that fail to make significant progress.

Competencies with a clear relevance to completion.

Hypothesis 7 – Planning and Organising

H_7: Participants who have completed will have a higher score for the competency of Planning and Organising.

Hypothesis 8 – Action Orientation

H_8: Participants who have completed will have a higher score for the competency of Action Orientation.

Hypothesis 9 - Strategic

H_9: Participants who have completed will have a higher score on the Strategic competency.

Hypothesis 10 - Flexibility

H_{10}: Participants who have completed will have a higher score for the competency of Flexibility.

Hypothesis 11 - Resilience

H_{11}: Participants who have completed will have a higher score for the competency of Resilience.

Hypothesis 12 – Personal Motivation

H_{12}: Participants who have completed will have a higher score for the competency of Personal Motivation.

Competencies with a possible relevance to completion.

Hypothesis 13 – Leadership

H_{13}: Participants who have completed will have a higher score for the competency of Leadership.

Hypothesis 14 – Quality Orientation

H_{14}: Participants who have completed will have a higher score for the competency of Quality Orientation.

Hypothesis 15 – Problem Solving & Analysis

H_{15}: Participants who have completed will have a higher score for the competency of Problem Solving & Analysis.

Hypothesis 16 – Written Communication

H_{16}: Participants who have completed will have a higher score for the competency of Written Communication.

Hypothesis 17 – Interpersonal Sensitivity

H_{17}: Participants who have completed will have a higher score for the competency of Interpersonal Sensitivity.

Hypothesis 18 – Competencies with no perceived relevance to completion

$H_{18.1}$: There will be no significant difference in the scores for Persuasiveness between successful candidates and those that did not complete.

$H_{18.2}$: There will be no significant difference in the scores for Specialist Knowledge between successful candidates and those that did not complete.

$H_{18.3}$: There will be no significant difference in the scores for Oral Communication between successful candidates and those that did not complete.

$H_{18.4}$: There will be no significant difference in the scores for Commercial Awareness between successful candidates and those that did not complete.

$H_{18.5}$: There will be no significant difference in the scores for Creativity and Innovation between successful candidates and those that did not complete.

The next chapter details the methodology used for the research.

CHAPTER 4: METHODOLOGY

4.1 General

This research is based on managers attending management qualification programmes at the Business School, Bournemouth University between 1991 and 1996. Competence based management qualification programmes (NVQs) were introduced into the Business School in 1991. 'Taught' programmes such as the DMS and MBA had been running much longer.

Data were collected on three groups of participants

Group 1: Participants who had successfully completed either an NVQ 4 or NVQ 5 programme in management.

Group 2: Participants who did not make any significant progress on their NVQ programme.

Group 3: Participants who had successfully completed the taught DMS programme.

Further details of the sample and definitions are given in paragraph 4.2.

The methodology employed enabled the collection of a wide range of data in order to explore the differences between the three groups and to test the hypotheses developed in Chapter 3. Three instruments were used and further details are given in paragraph 4.3.

Individual face to face interviews were also carried out with a pilot group of twelve participants, four from each of the three main groups. The purpose of the interview programme was to:

1. Check the format and wording of the questions on the purpose-designed external influences questionnaire.
2. Test the process and whether participants understood what was required of them when they received the three instruments for completion.

3. Explore factors that affected completion in more depth with a selection of participants in order to check basic assumptions about the nature of data to be collected and its relevance. Thus the general validity of the model of influences developed in Chapter 3 could be tested.

The results of the interview programme are given in Chapter 5.

4.2 The Population

The main purpose of the research was to identify whether there were differences between those completing the NVQ programme in management and those who failed to make any significant progress. A secondary objective was to test whether there were any differences between those who completed the NVQ program and those who completed the taught DMS. These groups were defined as follows and the numbers in each group are shown in Table 4.1.

Group 1: NVQ participants who completed the programme

At NVQ level 4, participants have to demonstrate competence in 9 units to receive the award. For NVQ level 5 it is 10 units. This group contains all participants who completed the required number of units between 1991 and May 1996.

As the total number of successful NVQ completions over this period was relatively small, this group was extended by including those participants who were within two units of completion. This was considered justifiable within the context of the research because experience showed that if participants reached this stage, they invariably completed the full programme. This expanded the total group to 38.

Group 2: NVQ participants who did not make any significant progress

This group of participants was defined as those who:

- had been registered on the NVQ programme for more than one year and had not completed any units or
- had been registered for more than two years and had not completed more than one unit.

There were a total of 61 participants in this category.

Group 3: Successful DMS participants

This group is defined as those who passed in all their assessed work for the taught DMS and were awarded the Diploma in Management Studies. DMS graduates in the three years 1994, 1995 and 1996 were included in the sample, a total of 63 participants.

Group	Total No. of candidates	Number of Responses (percentage response in brackets)			
		External Influences Questionnaire	LSQ	IMC (Self)	IMC (Others)
1. NVQ completed	38	35	35	35	30
(%Response)		(92.1%)	(92.1%)	(92.1%)	(78.9%)
2. NVQ no progress	61	30	30	30	21
(% Response)		(49.2%)	(49.2%)	(49.2%)	(34.4%)
3. DMS	63	33	32	31	20
(% Response)		(52.4%)	(50.8%)	(49.2%)	(31.7%)

Table 4.1 Sample sizes and response rates

The 'taught' DMS and the NVQ programmes draw on the same basic population of managers. These are located within the 'travel to work' radius of Bournemouth. They are generally qualified in their own professional field and have responsibility for the work of other staff.

However it is not possible to completely match the two groups because of the different organisations from which they come. For example, the local authorities used to sponsor people on the taught DMS but it is now their policy to support the competence based route. The same applies with Southern Newspapers and Siemens Plessey. It is not therefore possible to compare, for example, a local authority group on both the taught and competence based programmes.

4.3 The Instruments

4.3.1 General

Three instruments were used for collecting the data. These were as follows.

1. A questionnaire designed to collect data on external influences such as employer support, reason for taking the programme, etc.
2. The Learning Styles Questionnaire (LSQ) to identify the learning styles of participants. This questionnaire was developed by Peter Honey and Alan Mumford (1992).
3. The Inventory of Management Competences (IMC), a psychometric test of personal competences developed by Saville and Holdsworth (1996).

The following sections discuss these instruments in more detail.

4.3.2 External influences questionnaire

This questionnaire was developed from the model of influences on completion (see figure 3.1). It was designed to collect data on all those factors other than personal qualities and competencies that were identified in the model as having an effect on completion.

The questionnaire used for the pilot group is shown in Appendix 8. This was revised in the light of experience with the pilot group and the final version is shown in Appendix 9. It is this final version that will now be discussed.

Section 1 collected the biographical data for each participant and covers name, date of birth and course on which enrolled.
Q 4 and 5 collected details of employer. This was important to know for the NVQ programmes as some of the in-house courses differed in their flexibility. This was an important influence on completion.
Q 6, 7 and 8 provided useful background on the type of job of participants and any job changes which might assist in evaluating work loads.

Section 2 collected data on the degree of support that participants received from various sources. Questions 9 – 12 are factual. Questions 13 – 16 are based on participant perceptions and five-point Likert scales were used.

Q9. It was considered important to identify who initially proposed the participant for the course as this could have an influence on motivation. In some cases, sponsoring organisations have 'pushed' relevant participants to take the programme but lack of motivation has resulted in an early drop out.
Q10. Whether the employee paid the course fee in whole or in part is a direct measure of support.
Q11 and 12. Similarly, whether the employer contributed financial support towards the cost of books and the amount of time off work given are direct measures of employer support.
Q13 and 14 reflected the participant's perception of two forms of support from the employer – 'support from his/her direct line manager' and 'support from the organisation'. Experience with NVQ programmes showed that these could be different. The 'organisation' was generally represented by the training department who were responsible for setting up the programme in NVQ 'in-house' courses. It was therefore quite feasible for the organisation to set up and be supportive of the programme whilst the participant's own line manager was not supportive.
A five-point Likert scale was used to identify participant ratings for each of these two forms of support.
Q15. Support from course group. This question was added after the pilot study when it became apparent that some participants were significantly affected by other members in their course group. In some cases, a very supportive group helped members through difficult patches in the course. In other cases, one or two strong but negative members of groups tended to demotivate others in the group.
Q16. Support from home. Again, this question was added after the interview programme as it emerged as an influential factor during these interviews.

Section 3 comprised two questions to identify the workload of participants.
Q17 asked participants to rate their perception of their workload on a 5-point scale.
Q18 was an estimate of the average number of hours worked per week and serves as supplementary information. Both questions were included in the questionnaire

because it became apparent in the interview programme that a higher number of hours worked did not necessarily correlate with a 'demanding work load'. In some cases, a 37 hour week was equated with very demanding work loads. In other cases, weekly hours of around 45 were only rated 'average' on the 'undemanding-extremely demanding' scale.

Section 4 covered the reasons for taking the course and the perceived importance of management qualifications.

Q19 – objectives when enrolling for the programme.

Participants were asked to rate the importance of each of three objectives:

- to achieve a qualification
- to improve job performance
- to improve chances of career progression.

The purpose of this question was to test whether participants who were more 'qualification oriented' were more likely to complete the programme than others.

Q20 was a check question that allowed those DMS participants who were unaware of NVQs to skip to Q22(b).

Q21 (a) and (b) – the importance of NVQ awards compared to a University award is an important variable in the 'Influences on Completion model' and hence Q21 asked participants to rate this importance now and in the future on a five-point Likert scale.

Similarly Q22 (a) and (b) collected data on the participant's perception of how the organisation rated the importance of both NVQs in management and management qualifications generally.

Q23, the final question, was an open question, directed at those NVQ participants who did not complete in order to identify any other influences that might have affected completion.

4.3.3 The Learning Styles Questionnaire (LSQ)

The Learning Styles Questionnaire (LSQ) was developed in 1982 by Honey and Mumford (1992). The structure of the questionnaire and the reason for its selection in this research were discussed in paragraph 2.8.3. A copy is included in Appendix 10.

Honey and Mumford have published general norms for a wide cross section of professional/managerial people working in industry and commerce in the UK. These are based on a total sample of 3500. These norms allow scores to be divided into percentile bands to reveal individual preferences for particular styles when compared with group norms.

For the purposes of this research, however, interest is focussed on whether competence based programmes are more suitable for those with particular learning styles. Thus the analysis will be concerned with exploring differences in raw scores between the different course groups.

The test-retest reliability of the LSQ was checked by Honey and Mumford by asking a total of 50 people to complete the questionnaire twice, with a two-week gap between the two occasions. The correlation between the two sets of results was 0.89%. Independent tests have also found high reliability with test-retest results ranging from 0.80 to 0.86 (Wilson, 1989).

In commenting on the validity of the LSQ as an instrument to measure learning style, Honey and Mumford refer to two types of validity – face validity and 'real' or 'technical' validity. Face validity refers to the reaction of those completing the questionnaire in terms of whether the result seems to reflect the way they learn. According to Honey and Mumford:

"Face validity (as opposed to real validity) for the questionnaire is not in doubt. It has been rare for us to encounter anyone who disputes the accuracy of their questionnaire result." *(Honey and Mumford, 1992, p80)*

This has also been the experience of this researcher who has used the LSQ on a wide range of management courses.

When discussing real or technical validity, Honey and Mumford are referring to the relationship between scores on the LSQ and a respondent's actual behaviour. Typically this could be checked by cross-referencing with other measures of learning

style. However, technical validity is more difficult to confirm. Again, according to Honey and Mumford:

"The technical validity is harder to determine, especially in the area where there are few established questionnaires with which to draw comparisons." *(Op. Cit.)*

No firm evidence of technical validity is therefore available.

4.3.4 The Inventory of Management Competencies (IMC)

The development of the IMC by Saville and Holdsworth and its structure were discussed in paragraphs 2.5.2 and 2.6.3 and the reasons for its choice for this research were given in paragraph 2.6.3. The sixteen competencies in the SHL model are shown in Appendix 4. Sample behavioural statements and choices from the questionnaire are given in Appendix 6. Samples of normative and ipsative profile charts that are derived from the answers to the IMC are shown in Appendix 11.

Normative and Ipsative profiles

The 'compared to others' (normative) profile is based on the ratings given on the frequency scale for each behavioural statement. These are analysed in relation to a large comparison (ie, norm) group of managers. One of two norm groups are used, 'self' or 'other' depending on the source of the rating. Sten scores are calculated for each of the 16 competencies using the norm group as a reference.

The 'Relative Strengths' (ipsative) profile results from cumulating and norming the forced-choice (most/least) responses and is helpful in identifying managers' relative personal strengths. Because of the forced choice nature of this part of the inventory it is not possible to be high on every scale. Effectively each manager is 'restricted' to a set total score across which relative strengths and limitations can be assigned. This profile is much more likely to be able to resist rater distortion at the possible risk that the scores on the ipsative scales may not have exactly the same meaning as their normative counterparts. The fact that both types of profile are normed does go some way to reduce this difficulty.

The ipsative profile is particularly valuable in cases where the manager has similar results (high or low) across many of the competencies in the normative profile. There has, however, been some criticism of ipsative scales. Johnson et al (1988) argued that ipsative measures were inferior and could not be statistically analysed in the same way as normative measures. They considered that attempts at such statistical analysis were an exercise in futility and like 'cheating at patience'.

However, Saville and Willson (1991) demonstrated with both simulated data and real data that ipsative scores can be factored soundly and that reliability data are not overestimated. They also showed that under moderate conditions of central tendency bias in normative items, ipsative scores actually correlate better with hypothetical 'true' scores than the normative form.

Reliability and validity of the IMC

The IMC manual provides a detailed statistical analysis of the reliability and validity of the IMC instrument. Three methods for estimating reliability are applied:

i) Internal consistency – a measure of the accuracy or consistency with which a set of questionnaire items or statements measure one particular scale. Using the split-half method, the Cronbach Alpha reliability coefficients for internal consistency of the normative scales ranged from 0.83 to 0.91 showing a high degree of reliability. The coefficients for the ipsative scales were lower and ranged from 0.52 to 0.82. Fourteen of the sixteen ipsative scales were above 0.6 – a good level of reliability. The two remaining scales were 0.52 and 0.54 which is still acceptable.

ii) Test-retest reliability – the result of administering the same questionnaire on two separate occasions to the same people and correlating their results. A small-scale test-retest study on 35 subjects who completed the IMC twice with a break of one month between completions produced coefficients of 0.85 – 0.95 for the normative scales and 0.65 – 0.94 for the ipsative scales, again a good measure of reliability.

iii) Inter-rater reliability – the degree of agreement between different raters assessing the same individuals. One would not expect the same degree of agreement between

raters as for the more direct estimates of reliability. Correlations between ratings by self and others however showed a fair degree of agreement with the median correlation for the normative scales being 0.32 and for the ipsative, 0.36. This data provides additional indirect support for the reliability of the instrument.

Validity of the IMC

The **face validity** of the IMC is high in that respondents are asked to directly rate the frequency and relative occurrence of a range of competency-based behaviours. It is therefore a very direct measure of competencies and users can readily identify with this.

Construct validity was tested through factor analysis in the development of the model. Construct validity is the extent to which a test measures some underlying construct or trait. The factor analysis identified a range of underlying constructs and provided support for the construct validity of the IMC.

Criterion related validity is the relationship between scores on a measure and performance on a range of given criteria. SHL tested the criterion related validity of the IMC through three independent studies using other measures of performance. These included the OPQ tests, two AMT (ability) tests and two measures of job performance in a study on building society managers.

The results of the various analyses and studies therefore support the validity of the IMC instrument in its use as a measure of managerial competencies.

4.4 The research process

The target for response rate was to achieve a minimum of 30 respondents for each of the three groups. This was to enable sufficient sample sizes to enable the relevant statistical analysis to be carried out (Rees, 1995, page 96).

It was anticipated that achieving this response rate would be difficult for two reasons. Firstly, the total number of participants who had completed the programme was only 38 as shown in Table 4.1. For those that made little progress on the NVQ the

numbers were higher at 61 but this still required a 50% response rate from participants who had demonstrated their reluctance to hand in coursework. There were similar numbers for successful DMS students with a total of 63 potential respondents.

Secondly, the amount of information that the respondents were being asked to provide militated against a high response rate

In order to maximise the response therefore, the instruments were sent out in two batches. First the external influences questionnaire was sent out to all 162 course participants shown in Table 4.1. A covering letter invited them to participate in the survey, explained the process and requested them to complete and return the questionnaire.

On receipt of the completed external influences questionnaire, the LSQ and IMC instruments were sent out with a covering letter explaining how to complete and return these. A second copy of the IMC answer sheet was included and participants were asked to pass the question book and answer sheet to their manager for completion. Two stamped addressed envelopes were enclosed so that both participants and their manager could return the answer sheets independently. Significant chasing of participants was undertaken to encourage a high as possible response rate. Follow up letters were sent to all those not returning the external influences questionnaire and this elicited more responses.

For those who did not return their IMC answer sheets within a reasonable period, a further follow up letter was sent. If this did not prompt a response, the participants were telephoned and encouraged to respond. The last eight responses were achieved by the researcher going out and visiting the participants at their home or place of work and sitting with them whilst they completed the instruments.

4.5 The Interview Programme

The purpose of the interview programme was three-fold.

1. To test out the process and the instruments with a small number of respondents before sending out to the full sample.
2. To explore the various influences on completion in more depth with a sample of participants from each group.
3. To test the robustness of the model of influences developed in Chapter 3 and to check whether there were any additional influences identified by interviewees.

Twelve potential interviewees were identified, four from each of the sample groups as below.

Group 1: candidates who had completed the NVQ programme.
Group 2: candidates who did not make significant progress.
Group 3: candidates who successfully completed the DMS.

These interviewees were selected as participants who were articulate and likely to be reasonably open about their progress on the course. As far as possible with a small sample, a mix of sponsoring organisations was chosen.

Each potential interviewee was telephoned to elicit their support. The process then adopted was the same as that planned for the main sample. The Background Questionnaire was sent to the candidate for completion. On its return, the LSQ and IMC were sent by post with instructions for completion by the participant and his/her manager. After these had been completed and returned, individual interviews were conducted at the participants place of work.

4.6 Summary of Chapter 4

This chapter has described the methodology for this research programme. The main focus of the study was to explore influences on completion for participants on the NVQ programme in management at one educational institution, the Bournemouth

University Business School. Three data collection instruments were used to collect data for the research. A background questionnaire was developed to explore the external influences such as level of employer support and workload experienced by course participants. This also asked participants for their objectives in taking the course and their perceptions of the importance of NVQ qualifications. The Learning Styles Questionnaire (Honey and Mumford, 1992) was used to identify the learning style of each participant and the Inventory of Management Competencies to assess the personal competencies of each participant against the Saville and Holdsworth model.

The three instruments were initially sent out to a pilot group of 12 participants in order to test out the process, the clarity of the instructions and the wording of the background questionnaire. These participants were then interviewed using a semi-structured format to elicit feedback on the research process and the instruments. The interviews were also used to explore the influences on completion in more depth with a view to checking the robustness of the initial model. The findings from the interviews were used to produce a final version of the background questionnaire, which was sent out to all participants meeting the selection criteria.

The three instruments were sent out to a total of 99 NVQ participants, 38 of whom had completed the programme and 61 of whom made no significant progress. Sixty-five responses were received from the participants, an overall response rate of 66%. The instruments were also sent out to 63 successful participants on the taught DMS course in order to provide a comparison between the two types of courses and a 49% response rate achieved.

Further details of the interview process and the results of the interview programme are given in Chapter 5. The resulting modifications to the model of influences are discussed in Chapter 6. The statistical analysis of the data from the three instruments is given in Chapters 7 and 8.

CHAPTER 5: THE INTERVIEW PROGRAMME

5.1 Methodology

As indicated in paragraph 4.5, the purpose of the interview programme was three-fold.

1. To test out the process and the instruments with a small number of respondents before sending out to the full sample.
2. To explore the various influences on completion in more depth with a sample of participants from each group.
3. To test the robustness of the model of influences developed in Chapter 3 and to check whether there were any additional influences identified by interviewees.

The interviews were therefore structured sufficiently to ensure that key questions on the process and on the model were addressed to each interviewee. However, a range of open questions were used to identify the interviewee's views on the various topics and to explore any further issues or factors that may not have been reflected in the initial model. Probing and follow up questions were then used according to the initial responses. The typical interview format is shown in Appendix 12, this being the checklist that the interviewer used as an aide-memoir.

The interviews consisted of 3 main stages.

1. Introduction – to explain the reasons for the research, put the interviewee at ease and request permission to tape the interview.
2. The Process – to check whether the interviewee understood the process in terms of what they were being asked to do on receipt of the various questionnaires and instruments: also to check the wording of questions for ambiguities, lack of clarity or other problems.
3. Influences on progress – to explore influences on progress through the course and on completion and identify whether any influences other than those in the initial model were relevant to completion.

Interviews generally lasted between 30 and 60 minutes. All interviews were recorded.

After each interview, the data from the tape was transcribed on to a word processor and coded. As one of the aims of the interviews was to identify any additional influences on completion, an inductive approach to coding was adopted (Miles and Huberman, 1994) with no initial structure for the coding being imposed on the data. As each transcript was analysed different types of response were identified and the coding categories developed. Thus any developments in the research model would be 'grounded' in the data derived from the interviews (ibid.). The advantage of this approach to coding is that it allows a more open-minded analysis of the data and reduces the tendency to try and fit the data into a preconceived structure. The coding structure developed is shown in Appendix 13.

Analysis after each interview also resulted in a developing structure for the interviews. The questions in the early interviews were centred on the process and the initial model developed in Chapter 3. However, open and probing questions were used to explore further areas. As these revealed new issues, these were incorporated into later interviews and also contributed to the development of the model. Thus questions in later interviews could build on issues that arose in earlier ones. The interview structure shown in Appendix 12 therefore reflects that used in the later stages of the interview programme.

After coding, the data were reorganised into the various coding categories using a 'cut and paste' procedure on a word processor.

5.2 The Survey Process

5.2.1 The External Influences Questionnaire

Five out of the twelve people interviewed said that they had no problem completing the external influences questionnaire. Comments were, however, received from the other seven and the final version of the questionnaire was modified as a result.

There were some difficulties with Section 1 (biographical data), particularly when participants had changed their job or employer during the programme. This section was therefore modified to provide some free space so that respondents could elaborate as necessary.

Other changes made to Section 1 were that two new courses were added. These had recently been introduced to the Business School and added to the population of NVQ candidates. Also question 8 which asked how many staff participants were responsible for was cut out as it was not significant.

Two participants had difficulty with questions 9 and 10 concerning the percentage of the tuition fee paid by the employer. However, both of these were from Siemens Plessey who had a policy of asking participants to pay £200 towards the fee initially, this being refunded in stages as they progressed through the programme. Nevertheless, questions 9 and 10 were simplified into one question.

Three people had some difficulty with questions 15 and 16 on workload. This related to confusion over whether this meant 'office' workload or 'course' workload. Also the words 'during your registration' were ambiguous.

One person had difficulty with question 17 when he was asked to identify his principal objective for taking the course when he considered that all three objectives were important. The structure of this question was therefore changed and 5-point scales introduced.

Questions 20 to 24 were also restructured with Likert scales. This was partly to overcome difficulties that some respondents had with the 'either-or' nature of some questions and partly to assist in the statistical analysis of the results.

Appendix 5 shows the original questionnaire and Appendix 6 shows the revised version. The revised version was modified to reflect comments from interviewees and also to be more consistent in the use of scales. The original questionnaire was also produced in two forms, one for those who had completed their programme and one for those who had not. The latter incorporated an additional final question

inviting respondents to give reasons why they withdrew from the course. It was not considered necessary to use two separate forms for the main survey and hence this was included as an optional question for all respondents.

5.2.2 The Learning Styles Questionnaire

There were few difficulties with the LSQ. All found the instructions clear and straightforward. Some people had a little difficulty choosing between alternative responses on some questions but this is usual for this type of questionnaire.

5.2.3 The Inventory of Management Competencies

As one would expect, most people found this to be more difficult to complete. Generally people found the instructions to be clear – there was just more to do. Some had more difficulty with the forced choice questions asking them to rate 'least true' and 'most true' behaviours. Most found, however, that it was not as difficult as it first appeared.

5.2.4 The Overall Process

There was little comment on the overall process which everyone found to be quite clear. Two felt that it looked more daunting at first sight but was nevertheless clear.

There were some suggestions for improving the process but these were not feasible to implement. For example, one of these was to find out the name of the person's manager first and then send separate packs to participant and manager. This was to overcome the problem of first impressions and recipients feeling that there was too much to do on opening the pack whereas, in reality, part of it was for their manager to complete. The process actually followed was to send two sets of answer sheets to the participant and ask him/her to pass the second answer sheet with the IMC question book to their manager. A separate reply paid envelope was included for a direct response to ensure confidentiality. Whilst the suggestion would have been feasible for the limited number on the interview programme, it would not have been practicable for the higher numbers involved in the main survey. Also there was a

limited supply of the IMC Question books because of the cost and hence these were sent out in batches to maximise their use.

5.3 External Influences on Completion

5.3.1 Employer Support

Employer support was generally divided into two categories – support from 'the organisation' and support from the participant's immediate line manager. It was regarded as an important influencing factor though obviously not a deciding one as some NVQ participants who did not complete still acknowledged strong support from their employer.

'The organisation' was generally represented by the personnel department or personnel/training officer although, in one case, 'senior management' was also identified as a separate body. As the majority of NVQ programmes were company schemes, it was to be expected that most NVQ participants would consider personnel to be supportive and this was, in fact, the case. However, there was some disappointment that the support was not more active. For example, one successful NVQ participant felt that although the organisation had been generally supportive, there was no follow-up. Once the award had been achieved there was no discussion in terms of 'what next?' or how she could build on this achievement. It seemed to her that the organisation was happy to be seen to be doing the training as an end in itself. Similarly, one of the successful DMS participants was surprised that, despite contributing to the course fees, the organisation did not seem to be concerned about 'what it was getting for its investment'.

It was interesting to observe that all the NVQ participants who did not complete the programme expected more specific support from their line manager or organisation in terms of allocated time at work to compile their portfolios. This may arise because of the work-based nature of the NVQ programme and the need to collect documents from the workplace for the portfolio. However, this did not appear to be an issue with the successful NVQ participants or with the DMS group. Although two of the successful NVQ participants were able to make some time at work, the others did not expect this and simply took the coursework home to do in their own time.

Similarly, the DMS participants had the general expectation that coursework would be completed outside work hours. The unsuccessful NVQ participants were either unwilling or unable to do this.

Support from their immediate manager was an important influencing factor for most participants. The managers of the successful NVQ group did seem to take a more active interest in the programme by discussing progress, activities and impact on the workplace.

5.3.2 Work Pressures

Most of those interviewed considered that they had a fairly demanding workload. This was not always related to the number of hours worked. For example the ward sister in a hospital considered the job to be very demanding but the hours worked were 37 hours per week. Most, however, claimed to work in excess of 40 hours per week.

Some participants were able to cope with this workload and do the course work on top by working evenings and weekends at home. As already mentioned, the unsuccessful NVQ group were either unable or unwilling to do this. Few were given time at work to complete their course work.

The DMS participants were most inclined to see the course as a personal objective and therefore expected to do the course work at home, despite having demanding workloads at work.

5.3.3 Perceived Status of NVQs and Management Qualifications

The issue of the status of NVQs was included because these qualifications were relatively new. There was some uncertainty in the market as to whether they were a passing phase or whether they would indeed take the place of traditional qualifications. Thus the developing attitude of a participant or his/her employer towards NVQs might be considered to have an influence on the participant's motivation to complete the course.

For those on the NVQ programme, no strong pattern emerged from the interviews. The attitude of the successful participants was mixed. Two felt that the NVQ award was more important than the university certificate. Two valued the university award more highly. There was, however, a general view from all NVQ participants that NVQs were 'the way it is going'.

It was apparent that, in the later stages of the programme, there was some disillusionment with NVQs on the part of two of the training managers. This, however, tended to be a result of the low completion rate rather than a cause of it. Despite a lot of time and effort in encouraging, chasing and urging some participants by both the training manager and the Business School and the provision of extra support time it was felt that too many participants failed to make any significant progress.

Most participants who were not on company sponsored programmes, perceived their organisation as fairly neutral in terms of their attitude towards management qualifications generally although in two cases, qualifications were actively promoted.

5.3.4 Flexibility of Submission Dates

As discussed in Chapter 2, a major difference between the NVQ course and more traditional programmes such as the DMS is in the approach to assessment. For the NVQ programme the participant discusses the learning programme and assessment schedule with the tutor and agrees dates when units will be submitted for assessment. This is in the form of a learning contract. For the DMS and other taught programmes, participants are given an assessment schedule with tutor determined submission dates for assignments. Submission dates must be adhered to and there are penalties for late submission.

Those who completed the NVQ programme were more conscious of the need to submit work regularly. They set target dates for themselves in their learning contract and used these as a spur to completing units. Although at times they slipped on their planned dates, overall they kept up the pressure on themselves and made steady progress. Typical comments included:

"I kept a fairly steady pressure on all the way through"
"I had about three more to do and it was something like the end of May and I had to give them in by the beginning of July and I just thought let's do this and get them out the way, finish it"
"the regular meetings, six weekly was very good discipline from my point of view because it encouraged me to get the work done"
"I think really that once the Business School starting setting deadlines for getting units in, that was the best thing they did, because otherwise there was always something else you could be doing. Its busy at work, probably, or you've got a project at work to do, so you'd put it off, you wouldn't put it to the top of your list".
"It's OK saying you need flexibility, but I think you need deadlines to actually make yourself do it because you would always find that you have other things to do."

Thus even those who completed the programme found it helpful to have some extra 'hook' to help them discipline themselves. In some cases it was simply the desire to complete some work before each workshop. In the second example above, the participant wanted to finish by July so that she could meet the deadline for graduating that year.

Those who failed to make any significant progress on the NVQ programme seemed to find it difficult to stick to a self-imposed deadline. They constantly agreed new target dates for submission of units but failed to meet them. They would then agree a further date but again fail to meet it:

"well yes it sounds a bit regimented that I need to be told what to do, but I wanted to do it in a way that had the best effect."
"no I think it's got to be from yourself, I agree with the deadline part of things. Steve's been giving deadlines to everyone, he's good that that and perhaps that's where I ought to be improving myself but... "

The usual explanation given was pressure of work:

"It's the same at work when you are busy, it's 'Oh I haven't got time' that seems to be the excuse all the time but it is a true factor. It is very difficult to match in the two (work and course pressures) and I don't know what the answer is."

In view of the fact that the two successful groups were also handling demanding jobs, we must look elsewhere for a satisfactory explanation of the difference. Whether it lies in an inability to cope with two different kinds of priority or whether it is more of a motivational issue or personal quality will hopefully emerge from this research.

For the DMS participants, the assignment deadlines were a significant aspect of the course. Those who were able to meet the deadlines made satisfactory progress. Those who were unable to meet the deadlines would have to withdraw:

"From my personal experience, I would say that the structure of the programme is probably more important than personal qualities."
"The tight submission dates did cause problems but again that depends on how you like to do your work and who you are. I tended to leave mine to the deadline, certainly in the first two semesters."

Thus the issue of flexible, self-imposed target dates for assessed work as against tutor prescribed submission dates is certainly an important factor. Some later NVQ programmes did have more specific deadlines and participants did seem to respond to this discipline. As one participant put it:

"The thing is that all the courses that you do within the hospital, all the other sort of ENB courses and degree courses, you're given deadlines and although people are sort of freaking out because they've got to get it done by then, they know they've got to get it done by then or make arrangements to get extensions. So that's what you're used to. I don't think that's a bad thing really."

5.4 Further issues arising from the Interview Programme

5.4.1 General

During the course of the interviews, participants were asked for their views on other influences on course completion, both positive and negative. Additional factors identified were as follows:

- the influence of the course group
- the influence of home life
- the initiative for taking the course –whether this came from the participant or someone else
- other course issues
- other general influences.

Each of these will now be discussed in more detail.

5.4.2 Support from Course Group

Support from other members of the course group seemed to be a more significant factor for the DMS course. Three of the four interviewed considered this to be a major influence. Support took various forms. In some cases, it involved collecting lecture notes when someone could not attend on a certain day. At other times it involved peer pressure to keep going or to submit coursework on time. Typical comments were:

"not wanting to be seen as a quitter"
"even if you mention the fact that you are thinking of dropping out you were hammered literally"
"people were very helpful in taking notes and when we were doing group assignments, by ringing up or putting something in the post"
"we wanted everyone to survive and everyone to succeed in this course so when people were low and it happened to everyone during some stage of the course, the rest of the group did rally round quite well".

In contrast, the atmosphere in some of the NVQ groups was more mixed. In both successful and unsuccessful groups, some participants found it helpful to be able to exchange ideas with others. One comment from a successful participant was:

"I found it very helpful to be with another group of like-minded individuals who wanted to succeed."

This, however, was not very typical. Two of the successful group felt that they succeeded despite the group:

"I felt that I was striding ahead and leaving them behind and I almost felt like I was just showing off and boasting but it wasn't like that... I think it made me more determined because I thought yes I'll show them".

In the unsuccessful NVQ group, motivation was more adversely affected by negative comments expressed within the group:

"The first half hour would consist of 'wingeing' that they hadn't done anything and how difficult it is and strong criticism about it"
"there were the "moaning minnies" of the group and I guess if you became allied to them then you and everyone else starts saying this is all too difficult. Every time you interact with anyone in the group, it's always about how too difficult it is and so there wasn't much mutual support in terms of getting on with it from other people because everyone was under pressure".

Thus group interactions certainly had an influence on participants. Different people however, reacted in different ways. Certainly a positive support culture helped individuals through the programme and this was very evident with the DMS group. There was a stronger tendency to be negative in the NVQ groups. Some people succeeded in spite of this whereas others were pulled down by it.

It should be noted, however, that the DMS group met weekly for lectures and tutorials and therefore had more opportunity to build up a group culture. NVQ groups would typically meet once every six weeks.

5.4.3 Influence of Home Life

Three of the four successful DMS participants interviewed commented on the value of the strong support received from their partner and the positive nature of this influence. This perhaps arises because of the greater recognition of, and need to do, coursework at home. This manifested itself in different ways such as taking the children out so that the participant could concentrate on course work or encouraging them to stay on late in the library to complete assignments:

"Encouragement from my wife was quite important... I think stability at home is actually very important"
"I was very lucky with my family, they were very supportive of it, they all thought it was great"
"it helped me certainly, my husband being supportive and taking the child out and things like that because I was having to do work"

The successful NVQ participants made less of this factor with only one of the four interviewed raising it as an issue themselves without being specifically asked. On the other hand, three of the unsuccessful NVQ participants found that a busy home life was in conflict with making progress on course.

5.4.4 Initiative for taking the Course

It was evident that the initiative for participants enrolling on the various courses came from different sources. There was no clear pattern however across the small sample interviewed. For some of the successful NVQ and DMS participants, the initiative had come from their line manager. This sometimes was a very positive factor. The participant both appreciated the interest and support of their manager and also felt that they did not want to let them down. In other cases there was a strong personal initiative to take the course, sometimes to the extent of paying a large proportion of the course fees.

A further revealing comment from one of the NVQ participants who did not complete the programme is as follows:

"I saw it advertised and thought I would like to do it. I think there were a group of us in SATCOMS who all got together and we didn't like to be left behind so there was enthusiasm and Andy Start was very enthusiastic. Nick was in our department at the time and John Thompson so anyone who was anyone was going to be on the course so I thought right, maybe I should. That's part of my problem in a sense that I was simply following, towing the line and being a bit of a sheep and doing it in that fashion because I thought anything they must be capable of, I must be. Plus the more I read about it up front with Greg's marketing, I thought fine, it was a good idea. But I wasn't able to give it the commitment in the end that it needed."

There was also a little concern at the Business School at one stage that some training managers might be promoting the NVQ programme over-zealously and under-estimating the amount of work involved.

Thus in view of the comments made on this issue, it was decided to include a question on the Background Questionnaire to identify from where the initiative for taking the course came.

5.4.5 Other Course Issues

During the course of the interviews, a variety of comments were made about the course itself, the structure and the support from tutors. As these issues were generally characteristics of the course and therefore common to all participants, they are not identified as separate influences on completion. How participants react to some of these issues will, however, be reflected in the effect that personal qualities and competencies have on completion. For example, a common problem with the first issue of the MCI standards is that the terminology is difficult to understand. Thus a lot of time is spent in the portfolio workshops on interpreting the requirements of the standards and the wording. This generally became easier after participants had completed to or three units. Successful NVQ participants were those who could persevere. Others seemed unable to overcome this barrier.

The three most common difficulties raised by those interviewed and which may be considered to be a general negative influence on completion rates were:

- difficulty in understanding the terminology of the standards
- the 'bureaucracy' of the evidence collection and presentation process
- the amount of work involved in completing the programme.

Other course issues raised which could be either positive or negative influences on completion according to individual experience were as follows:

- availability of work-based evidence to meet the standards – some people had evidence readily available
- the value of the portfolio workshops
- the limited value of the learning contract in providing a discipline for submission
- the quality of the course documentation
- the availability of training courses to support the units
- the need and difficulty of reflecting on work based issues for the learning diary
- difficulties associated with compiling the portfolio and writing the personal reports
- the individual nature of the evidence collection process limiting the value of some group discussions with a greater need for individual support
- the relevance of the standards as a guide to good working practice.

For the DMS participants, as one would expect, the course issues raised were generally different because of the different nature of the programme. The main points were:

- the severe course workload
- the quality and credibility of lecturers
- the structure of the programme, time-scales and organisation of material
- tight deadlines for assignments and consequent pressure
- the value of the residential period for group development
- the opportunity to participate in the management of the course through the course committee.

5.4.6 Other General Influences on Completion

The following paragraphs list some of the other general comments on influences raised by interviewees.

Positive influences-NVQ participants

"I felt that I had the evidence for the majority of the units."

"We received extra support from the organisation for training if we were on a NVQ programme."

"Good support from the Business School."

"Being able to put in my own personal time and effort."

"The inspiration of a previous successful colleague."

"I like to be learning."

"Others in the organisation were doing it."

Positive influences-DMS participants

"Access to PCs."

"The good example of three colleagues who completed the course and who demonstrated changes and benefits in the way they worked."

"The attendance pattern was suitable."

" Good relationships with tutors."

Negative influences-NVQ participants

"If you haven't done academic work for a while."

"Setting too high a standard, trying to achieve perfection in presentation."

"Getting negative feedback on units."

"Need for a lot of time outside work."

"A lot of interactions at work are not written down so evidence is not available."

"That kind of studying doesn't work for me."

"My priorities."

"I was a team leader, not a line manager so had difficulty finding some evidence."

Negative influences-DMS participants

"Not having management experience."

"The break between Years 1 and 2 (some people found this an advantage)."

"A feeling of not being on top of it."

" Getting back into learning."

"The combined MBA/DMS programme."

" The quality of some lecturers in the first semester."

"The value base and culture of the course, the ideology" (this comment was from a social worker).

"More difficult to see relevance of material in first year."

5.5 Individual Qualities

5.5.1 Objectives when enrolling for the Course

The objectives that participants had when enrolling for their course are an important driver in terms of motivation. Discussions with those interviewed showed that the three types of objective identified on the initial questionnaire were the relevant objectives when they had registered on their programme. No other significant objectives were identified although the actual initiative sometimes came from other people, such as their line manager (see section 5.4.4). Illustrative comments are as follows:

"I would like to think that if I was in a position that I did go for another job and it was a decision between myself and someone else who didn't have the qualification, then it would stand me in good stead."

"If I was to become a manager then I wanted to manage well."

"The benefits of getting the qualification really. I don't think the motivation was that it would get us on in the company or raise our salary to give us better prospects. I think like most qualifications it is something you do for your career and not for where you are now."

"I'd seen colleagues of mine who had just floated up the career structure and found themselves in a management position without any training and I felt that I ought to do something about it before it happened to me."

"My career development prior to the course had been on a technical basis based on my formal training that I had received as a engineer. I enjoyed the NEBSS course and the direction that pushed me within the company and I think I needed to continue that to be able to progress within this organisation and probably within any other organisation."

The wording of this question was changed for the main survey and five-point Likert scales introduced. This was to reflect the fact that sometimes people had several equally rated objectives and had difficulty identifying the principal one. The use of scales makes comparisons between participants easier to make.

5.5.2 Participant Views on Personal Qualities needed for Completion

When asked about the personal qualities needed to complete the course, the most oft-repeated comment was that of **staying power** or a commitment to finish what had been started. This was also linked to **determination.**

"I had started it and I generally finish what I've started."
"I don't give up easily."
"Once I've started something, I like to see it through."
"I don't like being beaten."

Self-motivation was also frequently mentioned.

Other personal qualities quoted by NVQ participants were as follows:

- Dedicated
- Achiever
- Drive
- Enthusiasm
- Planning and allocation of time
- Stubborness
- Self-disciplined
- Self-starter
- A strong belief in self-development
- Outgoing
- Report writing oriented
- Good record-keeper
- Structured and methodical
- Single mindedness
- Ambition

- Strong will power
- You must have a strong desire to do it.
- A Completer-Finisher type
- You must be able to work on your own.

DMS participants reported similar qualities with two additional ones as follows:

- Ability to work in a group
- Goal driven (in order to meet assignment target dates).

If we cross refer these personal qualities with the Saville and Holdsworth (SHL) competency model discussed in Section 4.3.4 (see Appendix 4 for summary), we can see that they relate to eight of the sixteen competencies in the model as shown in Table 5.1.

The one personal quality not included in the above is 'Outgoing' which is more of a personality characteristic and not really covered by the SHL model.

In the later interviews, interviewees were shown the sixteen competencies in the SHL model and asked to give a view on which ones they thought were important in helping someone complete their course. One person said 'all of them'! Of the other responses, the third column in Table 5.1 shows which competencies were identified.

These personal qualities and the grouping in Table 5.1 are, of course, by no means conclusive because of the small numbers involved. However it does help to lend support to the hypotheses developed through the literature review by comparing these with a sample of the proposed research group.

Table 5.1 Personal Qualities identified by interviewees as contributing to course completion.

Competency	Personal Quality identified by interviewees	Competency specifically identified by interviewee
02 Planning & Organising	Planning & allocation of time Good record keeper Structured & methodical	√
03 Quality Orientation	Staying power Determination Goal driven	√
04 Persuasiveness		√
08 Written Communication	Report writing oriented	
10 Creativity & Innovation		√
11 Action Orientation	Achiever Drive Self-starter Able to work on own initiative	
12 Strategic	Strong belief in self-development	√
13 Interpersonal Sensitivity	Ability to work in a group	
14 Flexibility		√
15 Resilience	Self-disciplined Completer-Finisher type	√
16 Personal Motivation	Self-motivation Dedicated Enthusiasm Stubbornness Single mindedness Ambition Strong willpower A strong desire to do it	√

5.6 Conclusions from Interview Programme

It was recognised that the relatively small sample of course participants in the interview programme means that no significant quantitative results could be obtained. However, the three objectives for the interview programme outlined in paragraph 5.1 were achieved.

The first objective was to check the process to be used for the main research programme. Respondents were to be asked to complete three substantial instruments that would take them about an hour in total. It was important to check, therefore, that the instructions were clear enough to enable them to complete the questionnaires accurately. The methodology planned for the main fieldwork was shown to be feasible and respondents considered the instructions to be clear. The wording of a number of the questions was modified to take account of comments from the interviewees and the increased use of scales was adopted for the final version of the Background Questionnaire.

Interviews are appropriate methods to use for gathering information when an aim of the interview is *"to develop an understanding of the respondent's world"* (Easterby-Smith et al., 1991, p 4). Thus a semi-structured interview format was used to encourage the respondent to talk about his/her experiences on the programme and the various influences that might have affected progress. This more open discussion did enable a better understanding of the 'world' of the course participants, their reasons for taking the course, the difficulties faced and their general experience with the programme. It highlighted the fact that some participants were influenced by factors in addition to those in the initial draft of the Background Questionnaire. These included the effect of the course group, support from home and who initiated the participant's registration on the course. These were therefore included in the revised version of the Background Questionnaire used for the main sample.

The data gathered from the interviews led to a revision of the initial model for influences on completion that was developed in Chapter 3 and also some refinement of the hypotheses. These are discussed in the next chapter.

CHAPTER 6: A MODEL OF INFLUENCES ON COMPLETION AND REVISED HYPOTHESES

6.1 A model of influences on completion

The interview programme highlighted two influences on completion that were additional to those discussed in paragraph 3.2.2. These were:

- level of support from the course group
- level of support from home.

Although these had been identified as possible influences in other research as discussed in Chapter 2, the initial emphasis in this research was on personal qualities and work factors. Furthermore, in Metzner & Bean's (1987) research with part time students at American community colleges, family responsibilities were not significantly related to dropout. Neither was the influence of the course group included as a variable. However, the interviews with candidates in the pilot study demonstrated that these two factors were significant and needed to be included in the model.

The interviews also provided a better understanding of the influences already identified. For example, it was recognised that employer support was an important influence and the interviews clarified the distinction between support from the organisation generally, support from the Personnel department and support from a participant's line manager.

The proposed model for influences on course completion is shown in Figure 6.1. This has been influenced by Lewin's model for Force Field Analysis (Lewin, 1958). and Eccles (1983) who refers to the issue of external influences 'mediating' the level of achievement. Factors affecting completion have been divided into internal factors that tend to be driving forces for completion. These include factors such as determination, motivation etc. which will be reflected in the personal competencies. Objectives for taking the course are grouped under Initial Goal Orientation, which

will also be a driving force for completion. External influences such as work pressures, degree of support received etc. will moderate these driving forces either positively or negatively thereby affecting completion. A participant's personal competencies will also affect how (s)he responds to these external influences.

Entry characteristics have also been added to the model for the sake of completeness. These would normally include items such as age, gender and previous experience and qualifications. However, it was considered to be outside the scope of this research to collect data on previous experience and qualifications. This was because the philosophy of the NVQ scheme is to provide as open access as possible. Hence the participants come with a wide variety of previous experience and qualifications and sometimes with no qualifications at all. Comparisons would therefore be difficult as well as against the philosophy of the programme. It is also worthy of note that Bond (1988) in his study of DMS students found little difference in entry characteristics between successful and unsuccessful students. Nevertheless, data on age and gender would be collected for descriptive purposes.

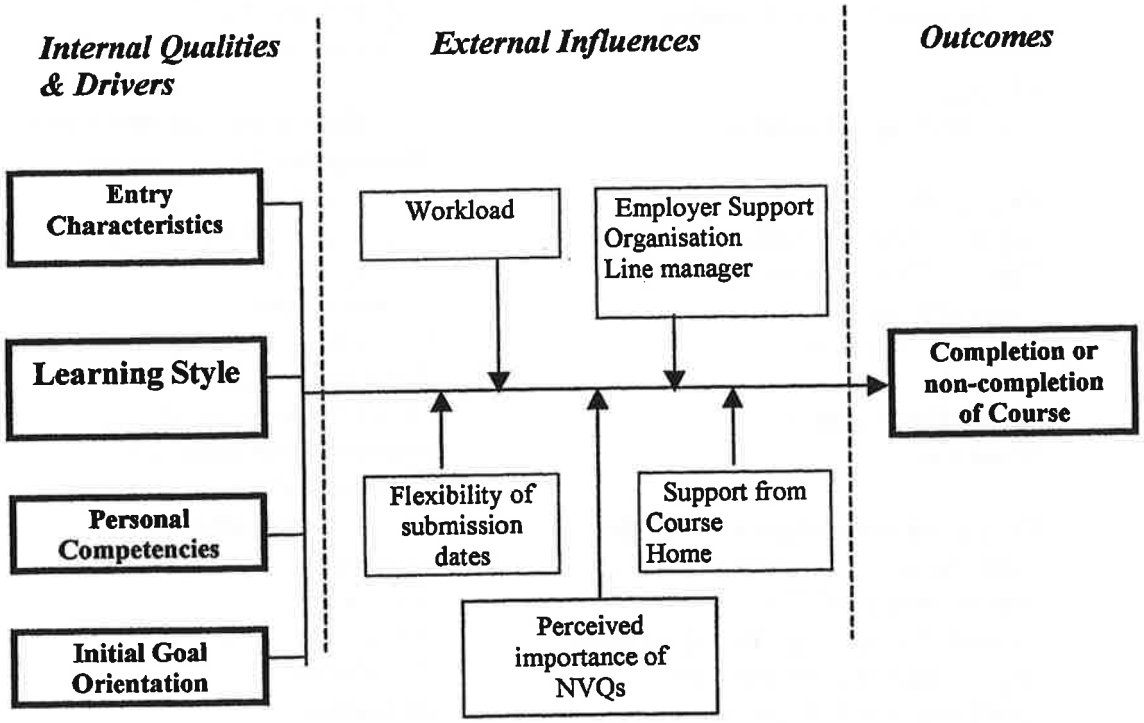

Figure 6.1 A model of influences on completion for NVQ courses

6.2 Information on the dataset

As discussed in Chapter 4, the data are provided by three instruments, the background questionnaire, the Learning Styles Questionnaire (LSQ) and the Inventory of Management Competencies (IMC). Further information on these instruments is given in Chapter 4. Table 6.1 lists the variables in the dataset and further details of their associated scales are given in Appendix 14.

Table 6.1: Variables in the Dataset

Descriptive Variables from the Background Questionnaire

Age
Sex
Percentage of fees paid
Book costs paid
Time off for study
Average hours worked

Predictor Variables from the Background Questionnaire

Flexibility
Flexibility of submission

Degree of Support:
Support from line manager
Support from organisation
Support from group
Support from home

Work Pressures:
Work load

Perceived Importance of NVQs
Importance of NVQs now
Importance of NVQs in future
Importance of NVQs to organisation
Importance of management qualifications to organisation

Variables for Motivating Influences:
Who proposed
Objective to achieve a qualification
Objective to improve job performance
Objective to improve chances of career progression

Variables from the Learning Styles Questionnaire
LSQ activist score
LSQ reflector score
LSQ theorist score
LSQ pragmatist score

Variables from the Inventory of Management Competencies
Leadership
Planning and Organising
Quality Orientation
Persuasiveness
Specialist Knowledge
Problem Solving & Analysis
Oral Communication
Written Communication
Commercial Awareness
Creativity & Innovation
Action Orientation
Strategic
Interpersonal Sensitivity
Flexibility
Resilience
Personal Motivation

An average rating for the personal competencies from the Saville and Holdsworth test was used for the analysis. A combined normative and ipsative score was first calculated for each participant by adding together the scores from the self-ratings and ratings by their manager (or others). The process of combining scores in this way was discussed with Saville and Holdsworth and it was confirmed that this procedure was acceptable and had been used in other situations.

An average score was then calculated for each participant by adding the self-rating score to the rating by manager (or others) and dividing by 2. Where there was no rating by the participant's manager (or other), the self-rating was used. See Chapter 4 for an explanation of normative and ipsative scores and the make-up of 'others'.

6.3 Hypotheses

Hypotheses for the influences on completion for the NVQ programme were developed in Chapter 3 and were based on an analysis of the theories and previous research on student attrition, competencies and learning styles as reviewed in Chapter 2. The two additional factors identified by the interviews with participants both relate to the issue of support. They show that the degree of support from within the course group and from the participant's home life are also important.

Previous studies of attrition have not specifically identified the significance of the course group itself, although Tinto, in describing his interactional model, observed that:

"experiences within the institution, primarily those arising out of interaction between the individual and other members of the college, student, staff and faculty are centrally related to further continuance in that institution." *(Tinto, 1993)*

Whilst this broad statement obviously would include support from the course group, Tinto's model was based on full-time, residential, undergraduate students for whom the interactions with other students are on a day-to-day basis. One would expect the effect to be less as the group meetings became more infrequent. Indeed, it was the case that the DMS students, who met weekly for longer sessions, mentioned this

issue in the interviews more than the NVQ participants who only met every six weeks. Bond (1988) did not mention this factor in his study of DMS students. Metzner and Bean (1987) in their study of part-time, mature students specifically found that social integration variables had no significant effects at all on dropout. Nevertheless, a significant proportion of the participants interviewed raised the issue and it is therefore necessary to add this element to the model and to include an additional hypothesis.

It is recognised that support from home is an important influence for mature, part-time students on traditional courses. The difficulty of balancing the need to study with the demands of family life, particularly when the participant has children has been noted by, amongst others, Tight (1987), Munn et al. (1992) and McGivney (1996). Bossons (1988) and Kember (1995) both found that students on distance learning courses who received support and encouragement from family found it easier to come to terms with the academic demands. However, the issue of support from home was not expected to be a major factor for NVQ participants because much of the activity is work-based and it was not anticipated that they would have to spend time at home on course work. In this respect, the NVQ programme differs from the DMS course, which does involve a significant amount of home study. This difference was reflected in the interviews in that three out of four successful DMS students mentioned support from home as a factor compared with one out of four successful NVQ participants. Three out of the four NVQ participants who did not complete raised this as an issue. It is difficult to know, however, whether this is a true influence or whether it is a result of attribution. However, as seven out of the twelve participants interviewed mentioned this factor, it was included in the model as one of the elements of support and an additional hypothesis added.

These two additional hypotheses together with those presented in Chapter 3 are detailed in the following section. Some of the hypotheses for external influences have been amended in view of the data collected from the interview programme. The hypotheses for personal competencies are also modified slightly to take account of the views expressed by participants interviewed on the importance of particular personal characteristics.

6.3.1 Hypotheses for External Influences

The model presents a number of external influences on programme completion in addition to personal qualities and competencies. These are as follows.

- Flexibility in submission dates for assessed work
- Degree of Support - from employer
  - from the course group
  - from home
- Work Load
- Perceived Importance of NVQs/Management Qualifications

Thus the revised list of hypotheses updated from paragraph 3.2 and taking into account the findings from the interview programme is as follows.

Hypothesis 1 – Flexibility in submission dates

H_1: Less Flexibility in submission dates for assessed work has a positive effect on completion.

Hypothesis 2 – Degree of Support

$H_{2.1}$: A higher Degree of Support from the organisation has a positive effect on completion.

$H_{2.2}$: A higher Degree of Support from the participant's line manager has a positive effect on completion.

$H_{2.3}$: A higher Degree of Support from the course group has a positive effect on completion.

$H_{2.4}$: A higher Degree of Support from home has a positive effect on completion.

Hypothesis 3 - Workload

H_3: A high Work Load has a negative effect on completion.

Hypothesis 4 – Perception of Qualifications

$H_{4.1}$: A positive perception of NVQs by the participant will have a positive effect on completion.

$H_{4.2}$: A positive perception of NVQs by the participant's organisation as seen by the participant will have a positive effect on completion.

$H_{4.3}$: A positive perception of management qualifications by the organisation as seen by the participant will have a positive effect on completion.

6.3.2 Hypotheses for motivating influences

A participant's motivation to complete the programme will be affected by the strength of their objectives or reasons for taking the course. This was identified as an important theme in the interviews and is also emphasised in the research of Bossons (1988) and Kember (1995). In the initial presentation of influences on completion in Chapter 3, the discussion focussed on the actual objective in enrolling and whether this led to intrinsic or extrinsic motivation. However, in the interviews with participants, emphasis was placed more on the strength of the objective rather than its nature. Thus hypothesis 5 has been modified as follows.

Hypothesis 5 – Initial Goal Orientation

$H_{5.1}$: Successful candidates will rate the importance of the objective 'to achieve a qualification' more highly than those who did not complete.

$H_{5.2}$: Successful candidates will rate the importance of the objective 'to improve job performance' more highly than those who did not complete.

$H_{5.3}$: Successful candidates will rate the importance of the objective 'to improve chances of career progression' more highly than those who did not complete.

$H_{5.4}$: The combined rating scores for successful candidates will be higher than for those who did not complete.

The revised questionnaire allowed the opportunity to analyse the data to check both for a difference in the nature of the objectives and in the strength of rating of importance.

6.3.3 Hypotheses for Learning Style

Learning Style was also confirmed as an important factor in participants' approach to the programme. The following hypothesis relates to this variable.

Hypothesis 6

H_6: The learning style of successful candidates will be significantly different from those that fail to make significant progress.

6.3.4 Hypotheses for personal competencies

In Chapter 3, the sixteen competencies in the IMC were classified into three groups:

- Six competencies with a clear relevance to completion. These were Planning and Organising, Action Orientation, Strategic, Flexibility, Resilience and Personal Motivation.
- Five competencies with a possible relevance to completion. These were Leadership, Quality Orientation, Problem Solving and Analysis, Written Communication and Interpersonal Sensitivity.
- Five competencies with no obvious relevance to completion. These were Persuasiveness, Specialist Knowledge, Oral Communication, Commercial Awareness and Creativity and Innovation.

As shown in Table 5.1, the six competencies considered to have a clear relevance to completion were confirmed as important in the interviews with the participants. The competency of Quality Orientation was also added in view of its concern with goals, standards and 'follow through' – all qualities quoted by those interviewed.

The two competencies of Persuasiveness and Creativity and Innovation were identified from the list of competencies by some candidates when this was shown to them but were not supported by general comments from other participants. Persuasiveness was suggested by one participant as useful if, for example, you needed to persuade your line manager to support your activities. Creativity and Innovation was considered a useful quality in terms of generating ideas for work-based evidence to meet the standards. These two competencies are therefore reclassified from 'no obvious relevance' to 'possible relevance'. The full list of hypotheses from the IMC competencies is therefore revised as follows.

Seven competencies with a clear relevance to completion:

Hypothesis 7

H_7: Participants who have completed will have a higher score for the competency of Planning and Organising.

Hypothesis 8

H_8: Participants who have completed will have a higher score for the competency of Quality Orientation.

Hypothesis 9

H_9: Participants who have completed will have a higher score for the competency of Action Orientation.

Hypothesis 10

H_{10}: Participants who have completed will have a higher score for the competency of Strategic.

Hypothesis 11

H_{11}: Participants who have completed will have a higher score for the competency of Flexibility.

Hypothesis 12

H_{12}: Participants who have completed will have a higher score for the competency of Resilience.

Hypothesis 13

H_{13}: Participants who have completed will have a higher score for the competency of Personal Motivation.

Six competencies with a possible relevance to completion:

Hypothesis 14

H_{14}: Participants who have completed will have a higher score for the competency of Leadership.

Hypothesis 15

H_{15}: Participants who have completed will have a higher score for the competency of Persuasiveness.

Hypothesis 16

H_{16}: Participants who have completed will have a higher score for the competency of Problem Solving & Analysis.

Hypothesis 17

H_{17}: Participants who have completed will have a higher score for the competency of Written Communication.

Hypothesis 18

H_{18}: Participants who have completed will have a higher score for the competency of Creativity and Innovation.

Hypothesis 19

H_{19}: Participants who have completed will have a higher score for the competency of Interpersonal Sensitivity.

Three competencies with no relevance to completion:

The remaining three competencies have no obvious relevance to completion and, for the sake of completeness, a null hypothesis is presented in each case.

Hypothesis 20

$H_{20.1}$: There will be no significant difference in the scores for 'Specialist Knowledge' between successful candidates and those that did not complete.

$H_{20.2}$: There will be no significant difference in the scores for 'Oral Communication' between successful candidates and those that did not complete.

$H_{20.3}$: There will be no significant difference in the scores for 'Commercial Awareness' between successful candidates and those that did not complete.

6.4 Summary of Chapter 6

Analysis of the data from the interviews as discussed in Chapter 5 showed that two further elements to the factor of support needed to be considered in this research study. These were support from the course group and support from home. The interview data also suggested some adjustment to the relevance of specific personal competencies to completion. Thus the competency of Quality Orientation was reclassified as having a clear relevance to completion. The competencies of Persuasiveness and Creativity and Innovation received some support from interviewees but as this was mixed, these two competencies were reclassified from no relevance to a possible relevance.

A model of influences on completion for NVQ participants was therefore developed based on the theories and previous research discussed in Chapter 2 and modified in the light of the findings from interviews with twelve participants, four from each group. Illustrated in Figure 6.1, the model portrays the four factors of personal competencies, initial goal orientation, learning style and entry characteristics as internal qualities that result in driving forces for completion. Seven of the competencies are hypothesised as having a clear relevance to completion and four a possible relevance. As the participant progresses through the course he/she is exposed to a variety of external influences or moderating forces which will influence him/her either positively or negatively. These external influences include the participant's workload, the level of support from the employer, the flexibility of submission dates, the perceived importance of NVQs and the level of support from the course group and from home. Whether the participant continues through to complete the programme will depend on the relative strength of the driving and moderating forces.

This model and its associated hypotheses were tested using the data collected from the three instruments as described in Chapter 5. The results are analysed in Chapters 7 and 8.

CHAPTER 7: RESULTS OF CORRELATION ANALYSIS AND FACTOR ANALYSIS

7.1 Introduction

Chapters 7 and 8 detail the analyses that were carried out on the data. This chapter explores the relationships between the variables using correlation and factor analysis. Chapter 8 examines the differences between groups using ANOVA and discriminant analysis.

A study of the correlation matrix is useful for both the examination of the relationships between variables and as a test for appropriateness of factor analysis. Correlation is a measure of the linear relationship between variables and the SPSS package used for the analysis identifies relationships that are significant at the 1% and 5% levels. The Pearson correlation coefficient gives a measure of the degree of association between the variables and varies between –1 and +1.

The purpose of factor analysis is to condense the original variables into a smaller set of new, composite factors with a minimum loss of information. That is to identify and define the fundamental constructs that may underlie the original variables (Hair et al, 1995). Thus factor analysis can be used for three purposes:

- To identify the structure of relationships among variables
- To identify representative variables from a large number of variables for use in subsequent analyses
- To create an entirely new set of variables, much smaller in number, to partially or completely replace the original set of variables for subsequent multi-variate analysis (e.g. for the ANOVA and discriminant analysis).

A pre-requisite for factor analysis is that there are associations between the variables. This can be tested by examination of the correlation matrix. Also, the Measure of Sampling Adequacy (MSA) is an index provided by the SPSS package which is a measure of the degree of inter-correlation between the variables. It ranges from zero

to 1 and should be above 0.5 for factor analysis to be considered appropriate (Hair et al, op.cit).

7.2 Validation of the Data

Analysis started with an examination of the raw data and a more detailed description is given in Appendix 15.

Tests for normality were carried out on the data. For each variable, the histogram, box plot and normality plots were examined and the degree of skewness and kurtosis calculated. Tests on the complete dataset showed that the data were reasonably normally distributed with both skewness and kurtosis being within the generally accepted range -1 to + 1 (Hair et al, 1995; Rees, 1995).

Two variables were slightly out of this range – *Support from line manager* and *Support from home*. *Support from line manager* was on the limit for skewness at -1.01 for the full sample. On closer examination this is seen to be a result of a significant negative skew for Group NVQA, the successful NVQ participants. This reflects the much greater degree of support received from participant's line managers for the successful NVQ participants than either the unsuccessful NVQ group or the DMS group.

There was also one outlier on *Support from line manager*. This participant came from one particular company group where the support from the line managers was perceived to be very low and, in some cases, antagonistic. Few participants completed the programme and those that did were very scathing about the level of support. This outlier reflects a candidate who was successful in completing the course despite receiving no support from his line manager. Removal of the outlier improves normality for the successful NVQ group by reducing the level of skewness and kurtosis. However, inclusion of this value does not affect the overall results and it has therefore been left in the analysis.

Support from home was marginally over on skewness at -1.05. A review of the histogram shows that the distortion arises from the nature of responses rather than the

presence of outliers. On the Likert scale, 51% of participants rated 4 or 5 for this variable representing either 'some encouragement' or 'significant encouragement' to progress. 23.5% rated *support from home* as neutral and 25.5% rated this as either 'some discouragement' or 'significant discouragement' to progress (1 and 2 on the scale). The effect of this will be considered later in the analysis.

7.3 Descriptive statistics

The total sample comprised 98 course participants divided into three groups – 35 successful NVQ participants, 30 who did not make significant progress on NVQ programme and 33 successful DMS participants. The age range varied from 24 to 54 years and was normally distributed around an overall mean of 40.1 years. There was no significant difference in means between the three groups, these being 40.5, 39.7 and 40.0 respectively. Further details of the statistics are given in Appendix 16

The male/female distribution is shown in Table 7.1.

Table 7.1 Male/Female distribution between groups

	Male	**Female**
Successful NVQ	20 (57%)	15 (43%)
NVQ non-completers	23 (77%)	7 (23%)
Total for NVQ groups	**43** **(66%)**	**22** **(34%)**
Successful DMS	21 (64%)	12 (36%)
Total	**64** **(65%)**	**34** **(35%)**

It can be seen that 65% of the total sample were males, a similar proportion being reflected in both the DMS group and the total for NVQ groups. However a greater proportion of the Successful NVQ group were female at 43% compared with 23% female for the NVQ non-completers.

With regard to direct support from their employer, 86% of participants had their full fee paid. Only four participants paid their own fees in full (all DMS students) whilst the remainder received support varying from 25% - 90%. Most employers (58%) did not contribute to the cost of course books but 87% did give some time off work to attend classes at the Business School. Only one participant received additional time off for study purposes.

The mean hours worked by the full sample was 44.5 hours per week. The NVQ non-completers claimed to work the highest hours with a mean of 45.6 hrs per week compared with 43.1 for the successful NVQ and 45.1 for the DMS group.

7.4 Results of the correlation analysis on external influences

A bivariate correlation analysis to calculate the Pearson correlation coefficient was carried out on two combinations of data prior to undertaking a factor analysis. The first analysis tested the relationships between the variables making up the various external influences themselves and also with the variables comprising initial goal orientation. Whilst it is reasonable to assume that external influences will not affect an individual's learning styles or personal competencies, attitudes of the organisation towards NVQs or management qualifications generally are likely to affect an individual's reasons for taking the course (Initial Goal Orientation).

The second analysis explored the relationships between the various internal qualities and drivers and included learning style, initial goal orientation and personal competencies and is discussed in section 7.5.

The results of the first correlation analysis are shown in Table 7.2. This analysis identified 17 correlations between pairs of variables that were of statistical significance at either the 5% or the 1% level.

Table 7.2 Correlation Matrix for external influences

	Age	Support-line manager	Support - organisation	Influence of course group	Influence of home life	Work load	Object to improve perform-ance	Object to improve career	Object to get qualific-ation	NVQ more important than University award now	NVQ more important in future	Importance to organisat'n of NVQs	Importance of mangmt qualification to organisat'n
Age	1.00	.02	.08	.00	-.07	.00	-.08	-.47**	-.04	.03	-.07	.23	.15
Line manager was supportive	.02	1.00	.70**	.05	-.01	-.02	.15	-.07	-.15	-.37**	-.21	.40**	.25*
Organisation was supportive	.08	.70**	1.00	.14	-.02	.04	.16	.03	-.11	-.19	-.18	.55**	.34**
Influence of course group	.00	.05	.14	1.00	.37**	-.02	.07	.21*	.10	.22	.02	.35**	.10
Influence of home life	-.07	-.01	-.02	.37**	1.00	.02	.24*	.24*	.28**	.20	.10	.04	-.10
Workload during course	.00	-.02	.04	-.02	.02	1.00	.14	.12	.02	-.22	-.16	.17	.20
Objective to improve performance	-.08	.15	.16	.07	.24*	.14	1.00	.17	.17	.19	.02	.08	.16
Objective to improve career progression	-.47**	-.07	.03	.21*	.24*	.12	.17	1.00	.35**	.23	.29*	-.02	.05
Objective to achieve a qualification	-.04	-.15	-.11	.10	.28**	.02	.17	.35**	1.00	.11	.04	-.05	.07
NVQ more important than University award now (N=65)	.03	-.37**	-.19	.22	.20	-.22	.19	.23	.11	1.00	.54**	-.06	.00
NVQ will be more important in future (N=65)	-.07	-.21	-.18	.02	.10	-.16	.02	.29*	.04	.54**	1.00	-.05	-.06
Importance to organisation of NVQs (N=64)	.23	.40**	.55**	.35**	.04	.17	.08	-.02	-.05	-.06	-.05	1.00	.82**
Importance of management qualifications to organisation	.15	.25*	.34**	.10	-.10	.20	.16	.05	.07	.00	-.06	.82**	1.00

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)
N = 98 except for NVQ specific variables as shown

The 17 significant correlations identified in Table 7.2 are discussed below. These are grouped and discussed in relation to the following major external influences on completion and goal orientation (also illustrated in the model in Figure 6.1).

- Entry characteristics
- Support from employer
- Support from outside work
- Initial goal orientation
- Perceived importance of NVQs.

All correlations quoted should be assumed as positive unless they are specifically indicated as negative.

Entry characteristics

1. *Age* with *Objective to improve career progression* (negative correlation at 1% level of significance).

Entry characteristics do appear to have an association with Initial Goal Orientation. This first association suggests that, as age increases, participants may be less likely to be using the course for career progression. This would not be unreasonable as older participants generally see the qualification as less of a factor in their career advancement than, for example, previous experience and achievement. The corollary of this is that younger participants are more likely to be taking the course for reasons of career progression.

Support from employer

At 1% level of significance:

2. *Support from line manager* with *support from organisation.*
3. *Support from line manager* and
   NVQ currently more important than University award.
4. *Support from line manager* and *Importance to organisation of NVQs.*

5. *Support from organisation* and
   Importance of management qualifications to the organisation.
6. *Support from organisation* and *Importance to organisation of NVQs.*

At 5% level of significance:

7. *Support from line manager* and
   Importance of management qualifications to organisation.

Support from the employer comprises two items, support from the participant's line manager and support from the organisation as a whole as perceived by the participant. These correlations show that the support from the line manager is very closely associated with support from the organisation ($r = 0.70$). It also correlates at the 5% level for all groups with the importance of management qualifications to the organisation. A possible interpretation of this is that for all participants, the line manager is more likely to support the participant if the organisation supports management qualifications generally. For NVQ groups, support from the line manager also correlated highly with the importance to the organisation of NVQs and with the perceived importance of NVQs in relation to a University award.

Support from the organisation also correlated at the 1% level of significance with two of the 'importance' items, these being importance to the organisation of management qualifications generally and of NVQs in particular for those on NVQ programmes. Thus there is an association between the degree to which the organisation values both management qualifications in general and NVQs in particular, and the support given to the participant.

Support from outside work

At 1% level of significance:

8. *Influence of course group* and *Influence of home life.*
9. *Influence of course group* and *Importance to organisation of NVQs.*
10. *Influence of home life* and *Objective to achieve a qualification.*

At 5% level of significance:

11. *Influence of course group* and *Objective to improve career progression.*
12. *Influence of home life* and *Objective to improve performance.*
13. *Influence of home life* and *Objective to improve career progression.*

This factor comprises the support received from the course group and the support that the participant receives from his/her home life. These two variables do correlate highly at the 1% level of significance ($r = 0.37$). There is no obvious reason why these two variables should be associated. It is possible, however, that the correlation arises through a third factor such as 'leadership'. This result will be discussed further in Chapter 9.

Support from the course group also correlates with the importance of NVQs to the organisation. This reflects the fact that some company-based groups did develop a high degree of cohesiveness in response to the company's requirement for them to complete the programme. The correlation coefficient of 0.35, however, shows that there is still a relatively wide spread in the responses.

There is a significant correlation between support from the course group and the objective to improve chances of career progression but the reason for this is less obvious.

In addition to correlating with support from the course group, support from home correlates with all three variables comprising Initial Goal Orientation. Thus there is an association between support from home and the strength of the objectives held by the participant.

Initial Goal Orientation

At 1% level of significance:

14. *Objective to achieve a qualification* and *Objective to improve career progression.*

At 5% level of significance:

15 . *Objective to improve career progression* and *NVQ will be more important in future.*

The high level of significance for the first of these suggests that there is a strong association between the objectives of achieving a qualification in management and aiming to improve career progression. The second correlation suggests a further association between the objectives of improving career progression and the perception that NVQs were likely to become more important. This is a possible indication of the value to participants of achieving the NVQ award.

Perceived importance of NVQs

At 1% level of significance:

16. *NVQ currently more important than university award* and
NVQ will be more important in future.

17. *Importance to organisation of NVQs* and
Importance of management qualifications to organisation.

This factor comprises four variables, the participant's perception of the importance of NVQs now and in the future, the importance of NVQs to the organisation and the importance of management qualifications to the organisation. Thus it can be seen that there is a high degree of association between the perceived importance of NVQs now and in the future. In other words, those that consider NVQs to be important now also believe that this importance will continue – that NVQs are here to stay.

There is also a high degree of correlation between the importance to the organisation of NVQs and of management qualifications generally with a correlation coefficient of 0.82. This suggests that support for the NVQ candidates is not just because of the special nature of the NVQ programme but part of a wider support for management qualifications.

Of the 17 significant correlations discussed above, the relationships with the highest positive correlation coefficients were:

- Support from the line manager and support from the organisation
- Support from the organisation and the importance the organisation attaches to NVQs and management qualifications generally
- Current perceptions of importance of NVQs and perceptions of future importance
- The importance of NVQs and the importance of management qualifications generally.

7.5 Results of the correlation analysis on learning style, personal competencies and initial goal orientation

The results of the correlation analysis on learning style, personal competencies and initial goal orientation are shown in Table 7.3. The purpose of this analysis was to check for any correlation between learning styles and personal competencies and also to see if initial goal orientation was linked with competencies such as motivation. The results are shown below. Definitions of the competencies are given in Appendix 4.

7.5.1 Initial Goal Orientation with Learning Style and Personal Competencies

There were 5 pairs of variables that correlated with statistical significance. These were as follows:

At 1% level of significance:

1. *Objective to improve job performance* and *IMC01 (Leadership).*
2. *Objective to improve job performance* and *LSQ Activist* (negative correlation).
3. . *Objective to improve job performance* and *IMC13 (Interpersonal Sensitivity).*
4. *Objective to improve chances of career progression* and *IMC16 (Personal Motivation).*

At 5% level of significance:

5. *Objective to improve job performance* and *IMC11 (Action Orientation)* (negative correlation).

Table 7.3: Correlation matrix for learning style, personal competencies and initial goal orientation

	Improve perform	Improve career	Achieve qualif.	Activ	Prag	Refl	Theo	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Objective to improve performance	1.00	.17	.17	-.20*	-.03	.12	.20	.34**	.11	.11	-.19	.10	.00	-.18	-.06	.05	-.12	-.21*	.00	.30**	.10	.02	.07
Objective to improve career progression	.17	1.00	.35**	.12	.13	-.04	.04	-.03	.05	.01	-.10	-.06	-.10	.01	.13	-.11	-.12	-.05	-.12	.01	.10	.04	.28**
Objective to achieve a qualification	.17	.35**	1.00	-.08	.19	.06	.16	.15	.19	.13	-.18	-.12	-.15	-.04	.00	-.08	-.10	.11	-.07	-.08	.05	.01	.18
LSQACTIV	-.20*	.12	-.08	1.00	.01	-.63**	-.58**	-.05	-.32**	-.31**	.19	-.23*	-.28**	.10	-.19	.11	.42**	.19	.02	-.14	.14	-.10	.18
LSQPRAG	-.03	.13	.19	.01	1.00	.09	.44**	-.02	.26**	.09	.11	-.12	.03	-.05	.02	-.08	-.18	.18	-.11	-.28**	-.10	.04	.10
LSQREFL	.12	-.04	.06	-.63**	.09	1.00	.68**	.01	.27**	.28**	-.18	.26**	.21*	-.10	.12	-.11	-.41**	-.13	-.02	.19	-.04	.17	-.05
LSQTHEOR	.20	.04	.16	-.58**	.44**	.68**	1.00	.16	.38**	.34**	-.12	.18	.24*	-.07	.12	-.24*	-.37**	-.01	-.06	.03	-.04	.25*	.06
IMC01	.34**	-.03	.15	-.05	-.02	.01	.16	1.00	.12	.09	.20*	-.08	-.14	-.02	-.15	-.11	-.02	.16	.22*	.30**	-.01	.12	.02
IMC02	.11	.05	.19	-.32**	.26**	.27**	.38**	.12	1.00	.38**	-.22*	.01	.20	-.26*	.11	.06	-.25*	-.07	.26*	-.13	-.05	.15	.13
IMC03	.11	.01	.13	-.31**	.09	.28**	.34**	.09	.38**	1.00	-.16	.27**	-.01	-.18	.23*	.13	-.14	.09	.19	-.18	-.09	.02	.16
IMC04	-.19	-.10	-.18	.19	.11	-.18	-.12	.20*	-.22*	-.16	1.00	.05	.10	.26**	-.15	.04	.22*	.42**	.22*	-.16	-.24*	.07	.04
IMC05	.10	-.06	-.12	-.23*	-.12	.26**	.18	-.08	.01	.27**	.05	1.00	.34**	-.04	-.03	.03	.22*	.17	.17	-.11	-.18	.01	.07
IMC06	.00	-.10	-.15	-.28**	.03	.21*	.24*	-.14	.20	-.01	.10	.34**	1.00	-.04	.24*	-.01	.05	-.02	.14	-.11	-.12	.07	-.20
IMC07	-.18	.01	-.04	.10	-.05	-.10	-.07	-.02	-.26*	-.18	.26**	-.04	-.04	1.00	.21*	-.22*	.01	-.13	-.10	.10	.12	.01	-.11
IMC08	-.06	.13	.00	-.19	.02	.12	.12	-.15	.11	.23*	-.15	-.03	.24*	.21*	1.00	-.21*	-.34**	-.21*	-.02	.10	-.01	-.01	-.06
IMC09	.05	-.11	-.08	.11	-.08	-.11	-.24*	-.11	.06	.13	.04	.03	-.01	-.22*	-.21*	1.00	.23*	.06	.34**	-.22*	.02	-.16	.21*
IMC10	-.12	-.12	-.10	.42**	-.18	-.41**	-.37**	-.02	-.25*	-.14	.22*	.22*	.05	.01	-.34**	.23*	1.00	.33**	.29**	-.36**	.06	-.28**	.24*
IMC11	-.21*	-.04	.11	.19	.18	-.13	-.01	.16	-.07	.09	.42**	.17	-.02	-.13	-.21*	.06	.33**	1.00	.14	-.45**	-.17	.10	.32**
IMC12	.00	-.12	-.07	.02	-.11	-.02	-.06	.22*	.26*	.19	.22*	.17	.14	-.10	-.02	.34**	.29**	.14	1.00	-.18	-.06	-.13	.20
IMC13	.30**	.01	-.08	-.14	-.28**	.13	.03	.30**	-.13	-.18	-.16	-.11	-.11	.10	.10	-.22*	-.36**	-.45**	-.18	1.00	.28**	.27**	-.30**
IMC14	.10	.10	.05	.14	-.10	-.04	-.04	-.01	-.05	-.09	-.24*	-.18	-.12	-.12	-.01	.02	.06	-.17	-.06	.28**	1.00	.31**	.17
IMC15	.02	.04	.01	-.10	.04	.17	.25*	.12	.15	.02	.07	.01	.07	.01	-.01	-.16	-.28**	.10	-.13	.27**	.31**	1.00	-.01
IMC16	.07	.28**	.18	.18	.10	-.05	.06	.02	.13	.16	.04	.07	-.20	-.11	-.06	.21*	.24*	.32**	.20	-.30**	.17	-.01	1.00

*Correlation is significant at the 0.05 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed)
N = 97

These correlations are indicative of possible relationships between the variables. For example, the competency of *Leadership* encompasses motivation to reach organisational goals (see Appendix 4). This is compatible with the first correlation (1). Those with a strong action orientation are less likely to seek a course as a means of improving performance as reflected by the negative correlation in (5) and, interestingly, there is also a negative correlation between the LSQ *Activist* scores and *Objective to improve job performance* (2). The third pairing suggests that there is an association between *Interpersonal sensitivity*, which involves working well with others, and the *Objective to improve job performance* and this does not seem unreasonable. Finally *Personal Motivation* which includes career commitment might be expected to correlate with the objective *to improve chances of career progression (4).*

These relationships will be discussed more fully in the next section covering the factor analysis and in the discussion of results in Chapter 9.

7.5.2 Learning style with personal competencies

Eighteen pairs of variables produced correlations that were statistically significant at either the 5% or 1% levels. The highest correlation coefficients were for the relationship between the competency of creativity and innovation and learning styles. These were as follows:

At 1% level of significance:

1. An *Activist learning style* and *Creativity and Innovation (IMC10).*
2. A *Reflector learning style* and *Creativity and Innovation* (negative correlation).
3. A *Theorist learning style* and *Creativity and Innovation* (negative correlation).

This fits with the Activist profile, which is open-minded and happy to try out anything new. The two negative correlations also fit with the characteristics of these learning styles. The Reflector tends to be cautious, observes, collects and analyses information before coming to any conclusion. The Theorist tends to emphasise logic, develops models and is also keen on analysis. Theorists are uncomfortable with creative ideas such as lateral thinking.

The next group of significant correlations relate to the competency of *Planning and Organising (IMC02)* and are all at the 1% level of significance.

4. An *Activist learning style* and *Planning and Organising* (negative correlation).
5. A *Reflector learning style* and *Planning and Organising.*
6. A *Theorist learning style* and *Planning and Organisation.*
7. A *Pragmatist learning style* and *Planning and Organisation.*

Planning ahead and organising is certainly not the Activist's strong point so this negative correlation is not to be unexpected. On the other hand, analysing information and reviewing the past and present when considering alternatives is a strong feature of the Reflector. Again, analysis and logic are prized by the theorist and hence a correlation here is not unexpected. However, there is no obvious association from theory between a Pragmatist learning style and Planning & Organising. The Pragmatist is a practical person and hence might be considered as someone who would tend to plan and organise but, at this stage this is conjecture.

The third set of correlations, all at the 1% level of significance, relate to the competency of *Quality Orientation.*

8. An *Activist learning style* and *Quality Orientation* (negative correlation).
9. A *Reflector learning style* and *Quality Orientation.*
10. A *Theorist learning style* and *Quality Orientation.*

There is no evidence from theory that an activist is not quality orientated although the emphasis on the 'here and now' could conceivably lead to less focus on longer-term issues of quality. Similarly, there is no evidence from theory concerning a possible positive correlation between a Reflector learning style and Quality Orientation. Again, whilst there is no direct evidence from theory of a possible correlation between a Theorist learning style and Quality Orientation, the theorist's tendency to perfectionism would tend to support this relationship.

The two other results that suggested negative correlations at a 1% level of significance were:

11. An *Activist learning style* and *Problem Solving and Analysis* (negative correlation).
12. A *Pragmatist learning style* and *Interpersonal Sensitivity* (negative correlation).

At first sight this first negative correlation might appear to be surprising as the Activist's strength is in solving problems and 'fire-fighting'. However, this particular competency is more about analysis of information to solve problems and analysis is not a strong feature of the Activist.

A negative correlation between a Pragmatist learning style and Interpersonal Sensitivity is a possibility, as the Pragmatist does like to act quickly and *"get on with things"*. A tendency towards *"impatience with ruminating and open-ended discussions"* (Honey and Mumford, 1992) could lead to impatience in dealing with interpersonal issues.

These relationships will be discussed further in the next section covering the factor analysis and in the discussion of results in Chapter 9.

It is interesting to note also the correlations between the four learning styles.

13. Reflector and Theorist at $r = 0.68$, significant at the 1% level.
14. Theorist and Pragmatist at $r = 0.44$, significant at the 1% level.
15. Activist and Reflector at $r = -0.63$, significant at the 1% level.
16. Activist and Theorist at $r = -0.58$, significant at the 1% level.

The first two results match very closely with Honey and Mumford's (1992) own research that produced correlations of 0.71 for the Reflector/Theorist relationship and 0.54 for the Theorist/Pragmatist. This suggests that these two combinations of learning style are the most likely to be found. Honey and Mumford also found weaker correlations for the combinations of Reflector/Pragmatist and Activist/Pragmatist but these are not supported by the correlations in Table 7.2 which are close to zero.

The second pair of results shows strong negative correlations between the Activist learning style and both Reflector and Theorist. This is as expected from the theoretical profile of each learning style since the qualities of the Activist tend to be opposite to those of the Reflectors and Theorists. Interestingly, Honey and Mumford's research on their groups produced near zero correlation coefficients for these two pairs of relationships rather than a negative correlation.

7.6 Summary of Correlation Analysis

The correlation analysis shows that there are significant associations between specific variables in this research. There were 17 significant correlations in the matrix covering the external influences and Initial Goal Orientation. The associations exhibiting the highest correlation coefficients were:

- Support from the line manager and support from the organisation
- Support from the organisation and the importance the organisation attaches to NVQs and management qualifications generally
- Current perceptions of the importance of NVQs and perceptions of their future importance
- The importance of NVQs and the importance of management qualifications generally.

These correlations are consistent with the elements in the model of influences of Figure 6.1.

In the matrix for Initial Goal Orientation, learning styles and personal competencies, there were 23 significant correlations. Most of these were consistent with the definitions of the respective variables. For example, *Objective to improve job performance* correlated positively with both *Leadership* and *Interpersonal Sensitivity*, which is consistent with the work orientation of these two competencies. The variable *Objective to improve career progression* correlated at the 1% level of significance with the competency of *Personal Motivation* which covers career commitment. The competency of *Planning and Organising* correlated at the 1%

level of significance with both the *Reflector* and the *Theorist* learning styles which, again, is consistent with the respective definitions.

These associations between variables help to clarify the items that make up the main constructs in the research model of Figure 6.1 and also demonstrate a consistency between the definitions of the respective variables. The fact that there are a number of significant correlations also supports the use of factor analysis and this is discussed in the next section.

7.7 Factor Analysis

7.7.1 General

A factor analysis was carried out on the two groups of data representing external influences and personal competencies to identify constructs that might underlie the original variables. The identification of underlying constructs serves as both a check on the theoretical model of influences on completion and as a means of reducing the number of variables into a smaller number of combined variables prior to undertaking a discriminant analysis.

The factor analysis was carried out using SPSS and a Principal Components Analysis method used. A Varimax rotation was applied as this is the most widely used method and seems to give a clearer separation of the factors (Hair et al., 1995). The latent root criterion for factor extraction was used based on eigenvalues greater than one (op.cit.).

7.7.2 Factor Analysis of External Variables

A factor analysis was performed on the twelve external variables relevant to the whole sample. The variables included were:

Degree of Support	*Support from line manager*
	Support from organisation
	Support from group
	Support from home
Work Pressures	*Work load*
Initial Goal Orientation	*Objective to achieve a qualification*
	Objective to improve job performance
	Objective to improve chances of career progression

Perceived Status of Qualifications	*Importance of NVQs now*
	Importance of NVQs in future
	Importance of NVQs to organisation
	Importance of management qualifications to organisation.

The analysis resulted in five factors being identified as listed below. The rotated factor loadings are shown in Table 7.4.

	Variable
Factor 1	*Support from line manager*
	Support from organisation
Factor 2	*Support from group*
	Support from home
	Objective to achieve a qualification
	Objective to improve chances of career progression
Factor 3	*Importance of NVQs now*
	Importance of NVQs in future
Factor 4	*Importance of NVQs to organisation*
	Importance of management qualifications to organisation
Factor 5	*Work load*
	Objective to improve job performance.

The Measure of Sampling Adequacy (MSA) is 0.55. This is a measure of the appropriateness of factor analysis and, according to Hair et al. (1995), should be above 0.5 for the factor analysis to be valid. The result for this analysis is in the acceptable range and suggests its appropriateness.

These five factors account for 70.1% of the total variance as shown in Table 7.5.

Table 7.4 Rotated component matrix for external influences, initial analysis

Variable	Component				
	1	2	3	4	5
Line manager was supportive	.88	-0.02	-0.02	0.14	-0.03
Organisation was supportive	.81	0.03	0.10	0.35	0.03
Influence of course group	0.23	.65	-0.14	0.19	-0.18
Influence of home life	0.13	.76	-0.05	-0.22	0.12
Workload during course	-0.11	-0.02	-0.20	0.25	.79
Objective to improve performance	0.27	0.27	0.25	-0.15	.66
Objective to achieve a qualification	-0.40	.65	0.03	0.15	0.09
Objective to improve career progression	-0.17	.56	0.23	0.13	0.23
NVQ currently more important than University award	-0.02	0.08	.89	0.04	-0.04
NVQ will be more important than university award in future	0.12	-0.09	.88	0.00	0.03
Importance to organisation of NVQs	0.19	0.07	0.07	.85	0.02
Importance of management qualifications to organisation	0.17	0.05	-0.02	.82	0.11

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 7 iterations.

Table 7.5 Total variance explained – external influences initial factor analysis

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumul. %	Total	% of Variance	Cumul. %	Total	% of Variance	Cumul. %
1	2.514	20.948	20.948	2.514	20.948	20.948	1.856	15.463	15.463
2	1.952	16.263	37.211	1.952	16.263	37.211	1.839	15.322	30.785
3	1.731	14.423	51.634	1.731	14.423	51.634	1.767	14.727	45.512
4	1.190	9.920	61.554	1.190	9.920	61.554	1.764	14.702	60.214
5	1.027	8.559	70.113	1.027	8.559	70.113	1.188	9.900	70.113

Extraction Method: Principal Component Analysis.

An initial factor analysis had included the variable age. However, age is an entry characteristic rather than an influencing variable and is therefore different in kind from the external influences. Inclusion in the factor analysis distorted the results by identifying an additional factor of age negatively linked with *Objective to improve chances of career progression*, a relationship that was identified in the correlation analysis of paragraph 7.4. Thus age was removed from the subsequent analysis.

A review of the variables making up the five factors identified in Table 7.4 shows that there is a clear conceptual basis for factors 1,3 and 4 and a less obvious basis for factors 2 and 5. Factor 2 appears to be made up from two further factors, one related to the nature of support received and the other related to objectives for taking the programme. Thus a further factor analysis was performed specifying a 6 factor extraction. The resulting component matrix is shown in Table 7.6 with the 'Total Variance Explained' figures given in Table 7.7.

The six factor extraction identifies the same variables as in the initial analysis but separates the composite 'factor 2' into two parts which may be interpreted as support from work and support from outside work This allows a clearer representation of the constructs represented by these factors as discussed below. It also improves the percentage of variance explained from 70.11% to 77.27%

Table 7.6 Rotated component matrix for six factors, external influences

	Component					
	1	2	3	4	5	6
Line manager was supportive	0.93	0.00	0.09	-0.07	0.03	0.02
Organisation was supportive	0.86	0.08	0.31	-0.02	0.05	0.02
Influence of course group	0.06	-0.07	0.28	0.05	0.77	-0.08
Influence of home life	0.02	0.00	-0.16	0.24	0.77	0.19
Workload during course	-0.09	-0.22	0.25	0.12	-0.14	0.77
Objective to improve performance	0.16	0.29	-0.09	0.02	0.31	0.72
Objective to improve career progression	0.09	0.12	0.00	0.86	0.05	0.11
Objective to achieve a qualification	-0.23	-0.04	0.07	0.78	0.23	0.00
NVQ currently more important than University award	-0.07	0.91	0.08	0.04	0.07	-0.01
NVQ will be more important than university award in future	0.15	0.87	-0.01	0.05	-0.15	0.02
Importance to organisation of NVQs	0.17	0.09	0.87	0.01	0.07	0.03
Importance of management qualifications to organisation	0.17	-0.02	0.83	0.05	0.02	0.11

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 6 iterations.

Table 7.7 Total variance explained for 6 factor analysis – external influences

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumul. %	Total	% of Variance	Cumul. %	Total	% of Variance	Cumul %
1	2.51	20.95	20.95	2.51	20.95	20.95	1.78	14.81	14.81
2	1.95	16.26	37.21	1.95	16.26	37.21	1.75	14.57	29.38
3	1.73	14.42	51.63	1.73	14.42	51.63	1.74	14.53	43.92
4	1.19	9.92	61.55	1.19	9.92	61.55	1.42	11.87	55.78
5	1.03	8.56	70.11	1.03	8.56	70.11	1.40	11.70	67.48
6	.86	7.16	77.27	.86	7.16	77.27	1.18	9.79	77.27

Extraction Method: Principal Component Analysis.

In specifying the six factor extraction, it is recognised that there are three criteria that may be used for identifying the number of factors. These are a) eigenvalues greater than 1 or b) a scree plot or c) what the theory suggests. In this case, the eigenvalue method produces 5 factors. The theory suggests that one of theses factors should be spit into two. The scree plot is indeterminate between 5 or 6 factors. Hence the 6 factor solution is considered more appropriate and is discussed below.

Factor 1 may be classified as ***'Employer Support'***. It represents overall support from the organisation and is a combination of support from the participant's line manager and from the organisation generally. Although the questionnaire sought to identify whether there was a difference between support from the participant's line manager and general support from the organisation, it does appear that these two variables are closely associated.

A Cronbach Alpha test for reliability was performed on the two variables making up Factor 1 and gave a value for Alpha of 0.82. Reliability is a measure of the internal consistency of the construct indicators, depicting the degree to which they indicate the common latent (unobserved) construct (Hair et al., 1995). According to Bagozzi (1994) the Cronbach Alpha test is the most frequently used measure and should be >0.6 although >0.7 is preferred. A figure of 0.82 suggests a high degree of reliability between these two variables making up the concept of 'Employer Support'

Factor 2 represents the ***'Participant's perception of the importance of NVQs'***. It is made up from the two variables, *Importance of NVQs now* and *Importance of NVQs*

in the future. The Cronbach Alpha figure is 0.79 for these two variables, again demonstrating a high degree of reliability. As NVQs are relatively new, the questionnaire sought to establish whether there was a difference in view between the current perception of NVQs and likely developments in the future. This difference will be explored further later in the analysis but it is apparent that the two variables are measuring the same underlying construct.

Factor 3 represents the participant's perception of the ***'Importance of management qualifications to the organisation'*** both generally and for NVQs in particular. There is a natural logic in these two variables being grouped together because one would expect that an organisation that values management qualifications would also value NVQs. Again, however, as NVQs are relatively new, some organisations are slow to recognise their worth and tend to rate the traditional, taught qualifications such as the DMS more highly. The Cronbach Alpha value for these two variables was 0.76 reflecting a high degree of reliability.

The remaining three factors do seem to have some logic to the grouping. Factor 4 links two items from 'Initial Goal Orientation', these being *Objective to achieve a qualification* and *Objective to improve chances of career progression.* It certainly seems reasonable to expect that the qualification would be seen as the vehicle for achieving career progression and, as discussed in paragraph 7.3, there is a correlation of 0.35 between them at a significance level of 1%. Factor 5 links two variables– *Support from group* and *Support from home.* There is an obvious common theme of 'Support from outside work' between these two variables and Table 7.2 shows a correlation factor of 0.369 significant at the 1% level. Factor 6 links *Workload* and *Objective to improve performance.* Whilst this is a less obvious pairing, there could be an underlying construct such as 'Orientation to work'. Thus a positive attitude towards work means that a participant who is keen to improve his work performance may also take on a higher workload. However, in this case Table 7.2 shows that there is no significant correlation between these two variables.

Despite the possible rationales for Factors 4,5 and 6, the Cronbach Alpha values for these factors are all below the acceptable level of 0.6 (Bagozzi, 1994) as shown in Table 7.8 indicating that these three factors are not sufficiently reliable.

Table 7.8: Cronbach Alpha Reliability Coefficients for 6-factor Analysis

Factor	Variables	Cronbach Alpha Coefficient
1. Employer support	Support from line manager Support from organisation	0.82
2. Participant's perception of importance of NVQs	NVQ more important than University award NVQ will be more important in future	0.79
3. Importance of management qualifications to organisation	Importance to organisation of NVQs Importance to organisation of management qualifications	0.76
4. Objective of career progression	Objective of career progression Objective to achieve a qualification	0.52
5. Support from outside work	Support from course group Support from home life	0.50
6. Orientation towards work	Workload Objective to improve performance	0.24

Thus a degree of data reduction can be achieved by combining six of the external influences variables into three new combination variables as represented by Factors 1, 2 and 3. The external influences would therefore be represented by the following nine variables (combined variables shown in bold).

Support from employer *(support from line manager + support from organisation)*

Support from group

Support from home

Workload

Objective to achieve a qualification

Objective to improve job performance

Objective to improve chances of career progression

Participant's perception of importance of NVQs

(importance of NVQs now + importance of NVQs in future)

Importance of management qualifications to organisation *(importance of management qualifications to organisation + importance of NVQs to organisation).*

These groupings are also supported by separate factor analyses on the individual constructs. Analysis of the four variables comprising 'support' identifies two factors. ***'Employer Support'***, as Factor 1 above, included *Support from line manager* and *Support from the organisation.* The second factor was 'Support from outside work' and included *Support from the group* and *Support from home* as discussed for Factor 5 above.

Separate factor analyses of the three variables representing objectives and of the four variables representing the perceived status of NVQs and management qualifications also supported the overall factor grouping identified above with the following two factors.

Factor: ***Importance of NVQs***
(importance of NVQs now + importance of NVQs in future)

Factor: ***Importance of Management Qualifications to Organisation***
(importance of management qualifications to organisation + importance of NVQs to organisation).

A third factor was again identified incorporating the variables *Objective to achieve a qualification* and *Objective to improve chances of career progression* but the marginal Cronbach Alpha coefficient at 0.52 was too marginal for this factor to be considered reliable as previously discussed.

7.7.3 Factor Analysis on Personal Competencies

A factor analysis on the personal competencies combined the 16 competencies into 7 factors. The grouping of the variables for the seven factors are as follows.

Table 7.9 Seven factors for personal competencies

Factor	Variable	Cronbach Alpha Coefficient
Factor 1	11. Action Orientation 16. Personal Motivation (13. Interpersonal Sensitivity – negative coefficient)	0.48
Factor 2	02. Planning & Organising 03. Quality Orientation	0.55
Factor 3	09. Commercial Awareness 10. Creativity & Innovation 12. Strategic	0.54
Factor 4	05. Specialist Knowledge 06. Problem Solving & Analysis	0.50
Factor 5	01. Leadership 04 Persuasiveness	0.33
Factor 6	14. Flexibility 15. Resilience	0.47
Factor 7	07. Oral Communication 08. Written Communication	0.35

The correlation matrix in Table 7.3 shows that there is a correlation between the variables within each factor which is significant at either the 1% or 5% level. Furthermore, the groupings of variables in each factor can be explained by means of an underlying construct. For example, Factor 1 combines *Action Orientation* and *Personal Motivation* which are not too dissimilar. These are negatively correlated with *Interpersonal Sensitivity*. Burgoyne and Stuart (1976) also found that managers that progressed rapidly through the organisation tended to be lower rated on interpersonal skills.

Similarly Factor 6, for example, combines the two variables of *Resilience* and *Flexibility* which are closely related behaviours.

However, the Measure of Sampling Adequacy is only 0.486. Although this is only just below the acceptable level of 0.5 it is too marginal for the factor analysis on personal competencies to be considered a valid way of reducing the number of variables. Furthermore, the Cronbach Alpha Coefficients are also low which indicates that the grouping of the variables into these factors is not reliable.

Tables showing details of the factor analysis are given in Appendix 17.

7.8 Summary of Chapter 7

This chapter has presented the results of two major analyses that examine the relationships between the data gathered in the field research. First the data were explored to check for normality, skewness and kurtosis and outliers were identified as a necessary precursor for the subsequent analyses. Though some variables were marginal, the data were sufficiently within normally accepted limits for normality to be accepted.

A correlation analysis on each of the external influences and on the personal competencies examined the relationships between the variables. Four pairs of variables representing external influences showed a high degree of correlation with a Pearson correlation factor above 0.5. The subsequent factor analysis identified three strong factors made up from three of these pairs of variables. These were 'Employer Support', 'Participant's perception of NVQs' and 'Importance of management qualifications to the organisation'. This is consistent with the factors in the model of influences on completion presented in Figure 6.1. This therefore allows a degree of data reduction to be achieved for the discriminant analysis in the next chapter.

Although the correlation analysis on the personal competencies showed correlations between certain of the variables at a statistically significant level, the Pearson correlation coefficients were all below the 0.5 level. The factor analysis on the personal competencies did identify 7 factors but the appropriateness of the analysis as judged by the Measure of Sampling Adequacy was marginal and the internal consistencies as measured by the Cronbach Alpha coefficient was too low. Thus factor analysis for personal competencies was not appropriate.

Chapter 8 will be concerned with examining the differences between the three course groups making up the total sample by means of an analysis of variance (ANOVA) and a discriminant analysis.

CHAPTER 8: RESULTS OF ANOVA AND DISCRIMINANT ANALYSIS

8.1 Introduction

This chapter explores the differences between the three groups of course participants making up the research sample. The three groups are:

Group 1 - NVQ participants who completed the programme (NVQA).
Group 2 - NVQ participants who did not make any significant progress (NVQB).
Group 3 –DMS participants who successfully completed their programme (DMS).

Two methods of analysis are used. The first is the one-way ANOVA. This is an extension of the t-test which is only appropriate for two groups (SPSS, 1998). It is not appropriate to conduct separate t-tests for each pair of groups because multiple t-tests inflate the overall Type 1 error rate (Hair et al, 1995). The use of ANOVA avoids this additional error. ANOVA compares the means between three or more groups and determines the probability that any differences in means across the groups are due solely to sampling error.

The second method used is a discriminant analysis. Discriminant analysis is appropriate where cases fall into known groups. The analysis finds linear combinations of the independent variables (known as the discriminant function) that best characterise the differences between the groups (SPSS, 1998). Discrimination is achieved by setting the function's weights for each variable to maximise the between-group variance relative to the within-group variance (Hair et al, 1995).

8.2 Results of ANOVA between groups

8.2.1 ANOVA for external influences

The validity of ANOVA depends on three key assumptions, normality of the variables, equal variances between groups and independence of observations. Normality of the variables has been discussed in section 7.2 and it was shown that

the data were normally distributed within an acceptable range with the exception of the two variables *support from line manager* and *support from home* which were marginally outside the range. These two variables are discussed later in the analysis. Independence of observations is confirmed by the research method which involved collection of data on an individual basis.

The results of Levene's test for equality of variance for the variables representing external influences are shown in Table 8.1. The Levene statistic is a measure of the equality of variance and the lower the figure, the more equal the variance between the groups. SPSS calculates the Levene statistic and tests for significance of difference between the groups. It can be seen from the table that 12 of the 13 variables meet the criterion for equality of variance. The exception is the variable *Importance of management qualifications to organisation* for which the Levene statistic indicates inequality of variance between the groups at the 5% level. Thus ANOVA can be used for the 12 variables.

Table 8.1 Levene's test for equality of variance – external influences

Variable	Levene Statistic	df1	df2	Sig.
Line manager was supportive	1.017	2	95	.365
Organisation was supportive	1.474	2	95	.234
Influence of course group	.485	2	95	.617
Influence of home life	.509	2	95	.603
Workload during course	1.494	2	95	.230
Combined total of objective ratings	.464	2	95	.630
Objective to improve performance	.839	2	95	.436
Objective to improve career progression	.753	2	95	.474
Objective to achieve a qualification	.403	2	95	.669
Importance of management qualifications to organisation	3.666	2	93	.029
NVQ will be more important than university award in future	1.758	2	86	.179
NVQ currently more important than University award	2.057	2	86	.134
Importance to organisation of NVQs	.446	2	84	.642

For the purposes of analysis the variables representing the external influences are divided into two groups. Nine of the variables are common to all three groups and thus comparisons can be made for these variables across all groups. Three of the variables relate to the two NVQ groups only and these have therefore been analysed using the t-test as shown in Table 8.4. A full list of the means and standard deviations for the variables are given in Appendix 16, Table 1.

Analysis of variables common to all three groups

Table 8.2 shows the overall significance of the ANOVA. The 'F' statistic is the ratio of 'between group' variance to 'within group' variance. Thus the higher the value of F, the greater the potential differences between the groups. The analysis identified significant differences between the groups at the 5% level in the following six variables:

- Line manager was supportive
- Influence of course group
- Influence of home life
- Workload during course
- Objective to improve performance
- Combined total of objective ratings.

Table 8.2 Results of ANOVA for external influences common to all groups

		Sum of Squares	df	Mean Square	F	Sig.
Line manager was supportive	Between groups	6.945	2	3.473	3.314	.041
	Within groups	99.555	95	1.048		
	Total	106.500	97			
Organisation was supportive	Between groups	2.465	2	1.233	1.443	.241
	Within groups	81.168	95	.854		
	Total	83.633	97			
Influence of course group	Between groups	11.092	2	5.546	9.509	.000
	Within groups	55.408	95	.583		
	Total	66.500	97			
Influence of home life	Between groups	40.671	2	20.336	14.891	.000
	Within groups	129.737	95	1.366		
	Total	170.408	97			
Workload during course	Between groups	5.123	2	2.561	5.606	.005
	Within groups	43.408	95	.457		
	Total	48.531	97			
Combined total of objective ratings	Between groups	33.980	2	16.990	4.586	.013
	Within groups	351.979	95	3.705		
	Total	385.959	97			
Objective to improve performance	Between groups	7.268	2	3.634	5.513	.005
	Within groups	62.620	95	.659		
	Total	69.888	97			
Objective to improve career progression	Between groups	3.342	2	1.671	1.715	.185
	Within groups	92.546	95	.974		
	Total	95.888	97			
Objective to achieve a qualification	Between groups	4.735	2	2.367	2.442	.092
	Within groups	92.082	95	.969		
	Total	96.816	97			

Shading identifies significant differences between group means at 5% level.

The basic ANOVA shown in Table 8.2 clearly identifies differences in the means between the three groups but does not identify which mean differs from another. The Tukey HSD test is the most widely used test for multiple comparisons (SPSS,1998) and was therefore applied to these five variables. The results are shown in Table 8.3.

For the variable *Importance of management qualifications to the organisation* the Levene Statistic was 3.66. Table 8.1 shows this is significant at the 0.029 level. Therefore equality of variance between groups cannot be assumed and Tukey's HSD test cannot be used. Thus the alternative Dunnett's T3 test was used which does not require equal variances. However, the test showed no significant differences between the groups for this variable.

Table 8.3 Comparisons between groups for external influences common to all groups

Dependent Variable	(I) Course group	(J) Course group	Mean difference (I-J)	Standard error	Sig.
Line manager was supportive	NVQ A	NVQ B	.55	.255	.082
		DMS	.56	.248	.068
	NVQ B	DMS	6.06E-03	.258	1.000
Influence of course group	NVQ A	NVQ B	.50(*)	.190	.025
		DMS	-.33	.185	.179
	NVQ B	DMS	-.84(*)	.193	.000
Influence of home life	NVQ A	NVQ B	1.15(*)	.291	.000
		DMS	-.41	.284	.330
	NVQ B	DMS	-1.56(*)	.295	.000
Workload during course	NVQ A	NVQ B	-.50(*)	.168	.011
		DMS	1.73E-03	.164	1.000
	NVQ B	DMS	.50(*)	.171	.012
Combined rating for objectives	NVQA	NVQB	1.45	.479	.009
		DMS	0.74	.467	.253
Objective to improve performance	NVQ A	NVQ B	.56(*)	.202	.018
		DMS	.57(*)	.197	.012
	NVQ B	DMS	1.21E-02	.205	.998

Comparison of differences using Tukey HSD analysis
* The mean difference is significant at the .05 level.
NVQA is the successful NVQ group and NVQB are those who did not complete

Table 8.3 shows that successful NVQ participants felt that they received more encouragement from the course group than did the non-completers, the mean rating being 3.97 compared with 3.47 (see Appendix 13 for details of means and standard deviations for each variable). They also perceived greater support from home with a mean rating of 3.69 compared with 2.53. Workload was considered to be very

demanding by non-completers with the mean rating on a five-point scale being 4.47 compared with a mean of 3.97 for those who did complete. The fourth significant difference shows that successful NVQ participants rated the importance of the course in achieving the objective 'to improve work performance' more highly than non-completers with a mean rating of 4.03 compared with 3.47. Also the combined variable which adds up all the ratings for objectives shows that successful NVQ participants generally rated objectives more highly.

The variable *Objective to improve performance* also shows up as a significant difference between successful NVQ participants and successful DMS participants with the mean rating of 4.03 for the NVQ group comparing with 3.45 for the DMS. The NVQB and DMS groups have almost identical means.

There was also a difference between groups identified by the basic ANOVA in the variable *Line manager was supportive* at a significance level of 0.041 but this was not highlighted by the Tukey HSD test of multiple comparisons. Examination of the means shows that the mean for the successful NVQ group was 4.29 compared with 3.73 for both NVQB and DMS groups, thereby indicating a higher perceived level of support from the line manager for those who completed their NVQ.

These results are discussed further in Chapter 9.

Analysis of NVQ specific variables

The results of the t-test on the three NVQ specific variables are shown in Table 8.4. It can be seen that the only variable for which there is a difference between groups is the participant's perception that *NVQ is currently more important than the University award.* The successful NVQ group rated this more highly than the non-completers with a mean of 2.97 compared with 2.43.

Table 8.4 Results of t-test for NVQ specific external influences

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.
NVQ currently more important than University award	Equal variances not assumed	4.11	.047	2.85	63	.007	.54	.19
NVQ will be more important in future	Equal variances assumed	1.07	.304	1.40	63	.166	.29	.21
Importance to organisation of NVQs	Equal variances assumed	.48	.490	1.22	62	.228	.27	.22

8.2.2 ANOVA for Learning Styles

The results of Levene's test for homogeneity of variance in Learning Styles between the three groups are shown in Table 8.5. The means and standard deviations are given in Appendix 16, Table 2.

Table 8.5 Levene's Test for equality of variance for Learning Style scores

	Levene Statistic	df1	df2	Significance
ACTIVIST	.168	2	94	.846
REFLECTOR	.022	2	94	.979
THEORIST	1.516	2	94	.225
PRAGMATIST	.011	2	94	.989

The table shows that there is equality of variance between groups. The Levene statistic is low and none of the variables show a significance near the 0.05 level. Thus the ANOVA test can be applied and the results are shown in Table 8.6. It can be seen that there are no significant differences between the groups in terms of Learning Style.

Table 8.6 Results of ANOVA for Learning Styles

		Sum of Squares	df	Mean Square	F	Sig.
LSQACTIV	Between Groups	5.024	2	2.512	.164	.849
	Within Groups	1436.852	94	15.286		
	Total	1441.876	96			
LSQREFL	Between Groups	46.703	2	23.352	1.570	.214
	Within Groups	1398.554	94	14.878		
	Total	1445.258	96			
LSQTHEOR	Between Groups	3.094	2	1.547	.130	.878
	Within Groups	1116.267	94	11.875		
	Total	1119.361	96			
LSQPRAG	Between Groups	.250	2	.125	.016	.984
	Within Groups	751.812	94	7.998		
	Total	752.062	96			

8.2.3 ANOVA for Personal Competencies

An average rating for the personal competencies from the Saville and Holdsworth test was used for the analysis. A combined normative and ipsative score was first calculated for each participant by adding together the scores from the self-ratings and ratings by their manager (or others). The process of combining scores in this way was discussed with Saville and Holdsworth and it was confirmed that this procedure was acceptable and had been used in other situations.

An average score was then calculated for each participant by adding the self-rating score to the rating by manager (or others) and dividing by 2. Where there was no rating by the participant's manager (or other), the self rating was used.

The results of Levene's test for homogeneity of variance between groups for personal competencies are shown in Table 8.7. The means and standard deviations are detailed in Appendix 13, Table 3. It can be seen that there is equality of variance between 15 of the 16 competencies, the exception being *08 Written Communication.* Thus it is appropriate to use ANOVA for these fifteen variables and the results are shown in Table 8.8.

Table 8.7 Levene's test for equality of variance - personal competencies

	Levene Statistic	df1	df2	Significance
IMC01 LEADERSHIP	.705	2	94	.497
IMC02 PLANNING & ORGANISING	1.750	2	94	.179
IMC03 QUALITY ORIENTATION	.974	2	94	.381
IMC04 PERSUASIVENESS	.995	2	94	.374
IMC05 SPECIALIST KNOWLEDGE	.152	2	94	.859
IMC06 PROBLEM SOLVING & ANALYSIS	.104	2	94	.902
IMC07 ORAL COMMUNICATION	.882	2	94	.417
IMC08 WRITTEN COMMUNICATION	3.926	2	94	.023
IMC09 COMMERCIAL AWARENESS	.656	2	94	.521
IMC10 CREATIVITY & INNOVATION	2.916	2	94	.059
IMC11 ACTION ORIENTATION	.450	2	94	.639
IMC12 STRATEGIC	.566	2	94	.570
IMC13 INTERPERSONAL SENSITIVITY	.174	2	94	.840
IMC14 FLEXIBILITY	.306	2	94	.737
IMC15 RESILIENCE	.325	2	94	.723
IMC16 PERSONAL MOTIVATION	.242	2	94	.785

The ANOVA analysis in Table 8.8 shows that there are significant differences between the groups at the 5% level in the following three competencies.

Competency	**Significance of difference**
IMC01 Leadership	0.002
IMC13 Interpersonal Sensitivity	0.041
IMC15 Resilience	0.033

Thus the Tukey HSD test for multiple comparisons was performed for these three competencies and the results are shown in Table 8.9.

Table 8.8 Results of ANOVA for personal competencies

		Sum of Squares	df	Mean Square	F	Sig.
IMC01 Leadership	Between groups	154.963	2	77.481	8.072	.001
	Within groups	902.285	94	9.599		
	Total	1057.247	96			
IMC02 Planning and Organising	Between groups	26.913	2	13.456	1.430	.245
	Within groups	884.670	94	9.411		
	Total	911.582	96			
IMC03 Quality Orientation	Between groups	5.440	2	2.720	.238	.788
	Within groups	1072.503	94	11.410		
	Total	1077.943	96			
IMC04 Persuasiveness	Between groups	21.894	2	10.947	1.272	.285
	Within groups	809.230	94	8.609		
	Total	831.124	96			
IMC05 Specialist Knowledge	Between groups	44.014	2	22.007	2.137	.124
	Within groups	968.027	94	10.298		
	Total	1012.041	96			
IMC06 Problem solving and Analysis	Between groups	27.188	2	13.594	2.180	.119
	Within groups	586.142	94	6.236		
	Total	613.330	96			
IMC07 Oral Communication	Between groups	25.052	2	12.526	1.300	.277
	Within groups	905.690	94	9.635		
	Total	930.742	96			
IMC09 Commercial Awareness	Between groups	32.053	2	16.026	1.171	.315
	Within groups	1286.989	94	13.691		
	Total	1319.041	96			
IMC10 Creativity and Innovation	Between groups	33.068	2	16.534	1.301	.277
	Within groups	1194.767	94	12.710		
	Total	1227.835	96			
IMC11 Action Orientation	Between groups	49.018	2	24.509	2.822	.065
	Within groups	816.493	94	8.686		
	Total	865.510	96			
IMC12 Strategic	Between groups	16.776	2	8.388	.986	.377
	Within groups	799.755	94	8.508		
	Total	816.531	96			
IMC13 Interpersonal Sensitivity	Between groups	66.290	2	33.145	3.089	.050
	Within groups	1008.757	94	10.731		
	Total	1075.046	96			
IMC14 Flexibility	Between groups	20.657	2	10.328	.990	.375
	Within groups	980.885	94	10.435		
	Total	1001.541	96			
IMC15 Resilience	Between groups	71.305	2	35.652	3.535	.033
	Within groups	948.102	94	10.086		
	Total	1019.407	96			
IMC16 Personal Motivation	Between groups	69.350	2	34.675	2.956	.057
	Within groups	1102.810	94	11.732		
	Total	1172.160	96			

Shading identifies significant differences between group means at 5% level.

Table 8.9 Multiple comparisons between groups for personal competencies

Dependent Variable	(I) Course group	(J) Course group	Mean Difference (I-J)	Standard Error	Significance
IMC01 LEADERSHIP	NVQ A	NVQ B	2.7024(*)	.771	.002
		DMS	2.5607(*)	.758	.003
	NVQ B	DMS	-.1417	.787	.982
IMC13 INTERPERSONAL SENSITIVITY	NVQ A	NVQ B	2.0048(*)	.815	.041
		DMS	1.1777	.801	.310
	NVQ B	DMS	-.8271	.833	.583
IMC15 RESILIENCE	NVQ A	NVQ B	-.1595	.790	.978
		DMS	1.7446	.777	.069
	NVQ B	DMS	1.9042	.807	.053

* The mean difference is significant at the .05 level.

Successful NVQ participants scored higher on *Leadership* with a mean score of 13.7 compared with 11.0 for the non-completers at a significance level of 0.002. They also scored higher on *Interpersonal Sensitivity* with a mean of 13.3 compared with 11.3 for the non-completers at a significance level of 0.041.

Successful NVQ participants also scored more highly on *Leadership* than the successful DMS group with means of 13.7 and 11.1 respectively at a significance level of 0.003. However, the difference was not significant between these two groups for the competency of *Interpersonal Sensitivity.*

Interestingly, there was no significant difference between the NVQ non-completers and the DMS group for *Leadership* with means almost identical at 11.0 and 11.1 respectively. These results are discussed further in Chapter 9.

The ANOVA also identified a difference between the groups at the 5% level of significance for the variable of *Resilience.* The Tukey HSD analysis shows that this difference is between the NVQ groups and the DMS although the level of significance is slightly above the 5% level. Thus there is no significant difference between the successful NVQ group and those who did not complete for *Resilience.*

A separate Dunnett's T3 test of multiple comparisons was carried out for the variable of *Written Communication* owing to the inequality of variance between the groups. However, this showed no significant difference.

8.3 Results of Discriminant Analysis

8.3.1 Discriminant Analysis for External Influences – NVQ groups

The validity of a discriminant analysis is based on a number of assumptions about the data. The two basic assumptions are:

- Normality of distribution of the variables
- The covariance matrices for each group must be approximately equal.

The first of these requirements, normality of distribution, was tested and discussed in section 7.1 and in Appendix 11. The second requirement, equal covariance matrices, is tested in the analysis of each group of variables.

The size of the groups, the number and nature of variables and the total number of observations is subject to some debate. According to Hair et al (1995), the smallest group size should exceed the number of independent variables and each group should have more than 20 observations. The groups should also be similar in size. Klecka (1980) stated that there may be any number of discriminating variables provided that it is less than the total number of cases minus two. Klecka maintained that discriminating variables should be interval or ratio whereas subsequent research showed that dummy variables can add to the success of a discriminant function (SPSS, 1988).

The data for the variables representing the external influences meet these requirements with the exception of two variables that are marginally outside the accepted range for skewness, these being *Support from line manager* and *Support from home* (see section 7.1). Thus a discriminant analysis is appropriate. The effect of the two variables marginal on skewness will be discussed in the interpretation of the results in Chapter 9.

All 14 variables representing the external influences were used in the initial discriminant analysis. These were the 12 variables used in the ANOVA as shown in Table 8.1 plus the two dummy variables of *Flexibility of submission* and *Who*

proposed participant (see Table 6.1 for a fuller description of the variables). A stepwise analysis was used and the results are shown in Tables 8.10 – 8.13.

Table 8.10 Discriminating variables in the analysis for external influences

Successful NVQ v NVQ Non-completers

Variables Entered/Removed

Step	Entered	Wilks' Lambda								Standardised Canonical Discriminant Function Coefficients
						Exact F				
		Statistic	df 1	df 2	df 3	Statistic	df 1	df 2	Significance	
1	Influence of home life	.82	1	1	62	13.73	1	62	.000	0.53
2	Workload during course	.66	2	1	62	15.96	2	61	.000	-0.72
3	Course structure	.52	3	1	62	18.72	3	60	.000	0.48
4	Objective to improve performance	.47	4	1	62	16.40	4	59	.000	0.44
5	Line manager was supportive	.44	5	1	62	14.80	5	58	.000	0.53
6	NVQ currently more important than University award	.41	6	1	62	13.63	6	57	.000	0.39

At each step, the variable that minimises the overall Wilks' Lambda is entered.
Maximum number of steps is 28. Minimum partial F to enter is 3.84. Maximum partial F to remove is 2.71.

Table 8.11 Structure matrix for External Influences

	Discriminant loadings
Influence of home life	.393
Workload during course	-.346
Objective to improve performance	.321
Course structure	.319
NVQ currently more important than University award	.278
Line manager was supportive	.266
Organisation was supportive(a)	.241
Importance to organisation of NVQs(a)	.190
Influence of course group(a)	.174
Objective to improve career progression(a)	.163
Importance of mangmt qualifications to organisation(a)	.116
WHOPROP2(a)	-.096
NVQ will be more important than university award in future(a)	.085
Objective to achieve a qualification(a)	.031

Pooled within-groups correlations between discriminating variables and standardised canonical discriminant functions
Variables ordered by absolute size of correlation within function.
(a) This variable not used in the analysis.

Table 8.12 Classification Results for External Influences
Successful NVQ v NVQ Non-completers

		Course group	Predicted Group Membership		Total
			NVQ A	NVQ B	
Original	Count	NVQ A	32	3	35
		NVQ B	2	28	30
	%	NVQ A	91.4	8.6	100.0
		NVQ B	6.7	93.3	100.0

92.3% of original grouped cases correctly classified.

Table 8.10 shows that 6 variables were identified as discriminating between those who successfully completed the NVQ programme (NVQA) and those that did not make any significant progress (NVQB).

The standardised discriminant coefficients in Table 8.10 show the relative contribution of each variable in the discriminant function. Thus it can be seen that *Workload during the course* is identified as the variable with the most contribution with a standardised discriminant coefficient of – 0.72. The effects of *Influence of home life* and *Support from line manager* were similar with coefficients of 0.53 closely followed by *Flexibility of submission and Objective to improve performance* with coefficients of 0.48 and 0.44 respectively. The variable *NVQ currently more important than University award* had the lowest coefficient at 0.39 but was nevertheless still significant.

Discriminant loadings provide an alternative way of assessing the relative contribution of each independent variable to the discriminant function and these are shown in Table 8.11. Discriminant loadings measure the simple correlation between each independent variable and the discriminant function. According to Hair et al (1995), they are considered more valid than weights as a means of interpreting the discriminating power of independent variables because of their correlational nature.

An examination of the discriminant loadings in Table 8.11 does suggest a slightly different order of importance in the discriminating power of the variables when compared with the discriminant coefficients.

Wilkes' Lambda is the proportion of the total variance in the discriminant scores not explained by differences among the groups. The value in this case was 0.411 which indicates that 41.1% of the variance is not explained by group differences. Lambda is used to test the null hypothesis that the means of all the variables across the groups are equal but provides little information regarding the success of the model for classifying cases (SPSS, 1998). The chi-square value of 52.5 does however demonstrate that there is a highly significant difference between the two group centroids.

Finally, Table 8.12 shows the degree of success of the discriminant function in classifying cases into groups. The table shows a high degree of predictive accuracy with overall 92.3% of cases classified correctly. 32 of the 35 NVQA participants were correctly classified and 28 out of 30 were correct for the NVQB group. Hair et al. (1995) suggest that the classification accuracy reflected in the overall hit ratio should be at least 25% higher than the proportional chance criterion. The group sizes are sufficiently similar to make the proportional chance criterion close to 50% so the target is for the predictive accuracy to exceed 62.5%. The result of 92.3% of cases classified correctly is therefore a very important result.

A second discriminant analysis was carried out on the external influences using three combined variables as identified from the factor analysis to replace six of the original variables. The purpose of this was to test the effect of a slightly more parsimonious model. Each combined variable was derived by taking the arithmetic sum of the two constituent variables. These were as follows:

1) ***Employer support*** = *Support from line manager + Support from organisation.*
2) ***Participant's perception of the importance of NVQs***
   = *NVQ currently more important than University award*
   + NVQ will be more important than University award in future.

3) ***Importance of management qualifications to the organisation***

= *importance to organisation of NVQs*

+ *Importance of management qualifications to organisation.*

The result of this analysis was that 4 discriminating variables were identified, these being the same first four variables as in the initial analysis shown in table 8.10. Thus although the constituent variables of ***Employer support*** and ***Participant's perception of the importance of NVQs*** are closely correlated, use of these factors is sufficient to remove the combined variables from the discriminant function. This also marginally reduced the predictive accuracy of the discriminant function which was 87.7% for the four variables compared with 92.3% in the initial analysis which used six discriminating variables. It is therefore considered more appropriate to use the results of the analysis with the original variables.

8.3.2 Discriminant Analysis for External Influences – Successful NVQ and DMS

In order to compare the successful NVQ participants with those who successfully completed the DMS a discriminant analysis was carried out for these two groups. In this case the three variables relating to the perception and importance of NVQs were omitted as these were not relevant to the DMS group. Thus eleven variables were included in the analysis. The Wilks' Lambda method was used to test for equality of group centroids with a stepwise analysis. The results are shown in Tables 8.13 and 8.14.

Table 8.13 reveals that the analysis identified 4 discriminating variables between the successful NVQ group and the successful DMS group. These are:

	Standardised Discriminant Coefficient
• *Flexibility of submission*	0.99
• *Influence of home life*	0.47
• *Organisation was supportive*	-0.37
• *Objective to improve performance*	-0.33

Table 8.13 Discriminating variables in the analysis for external influences Successful NVQ v. Successful DMS

Variables Entered/Removed(a,b,c)

Step	Entered	Wilks' Lambda								Standardised Canonical Discriminant Function Coefficients
						Exact F				
		Statistic	df 1	df2	df3	Statistic	df1	df2	Sig.	
1	Flexibility of submission	.490	1	1	65.0	67.7	1	65.0	.000	0.99
2	Organisation was supportive	.446	2	1	65.0	39.8	2	64.0	.000	-0.37
3	Influence of home life	.397	3	1	65.0	31.8	3	63.0	.000	0.47
4	Objective to improve performance	.372	4	1	65.0	26.2	4	62.0	.000	-0.33

At each step, the variable that minimises the overall Wilks' Lambda is entered.
a Maximum number of steps is 22.
b Minimum partial F to enter is 3.84.
c Maximum partial F to remove is 2.71.

Flexibility of submission is to be expected as a discriminating variable as this is a key difference between the NVQ programmes and the DMS, the DMS having no flexibility in submission dates for coursework. The contribution of this variable is illustrated by the standardised discriminant coefficient of 0.99 shown in the table. The variable *Organisation was supportive* was the second variable identified and a study of the means for the two groups shows that the NVQ group enjoyed a higher degree of support from their employing organisation with a mean of 4.26 compared with 3.87 for the DMS group. This results in a discriminant function coefficient of –0.37. On the other hand, the DMS group had a greater degree of support from home with a mean of 4.19 compared with 3.69 for the NVQ group and a discriminant function coefficient of 0.47. The final discriminating variable was *Objective to improve performance* which, although weaker, nevertheless showed significance with a higher mean for the NVQ group at 4.03 compared with the DMS group mean of 3.50. The discriminant function coefficient for this variable was –0.33.

The value for Wilks' Lambda was 0.372 indicating that 37.2% of the variance is not explained by group differences. The chi-square value of 62.3 again shows a highly significant difference between the group centroids.

Table 8.14 Classification Results for External Influences

Successful NVQ v Successful DMS

		Course group	Predicted Group Membership		Total
			NVQ A	DMS	
Original	Count	NVQ A	26	9	35
		DMS	1	32	33
	%	NVQ A	74.3	25.7	100.0
		DMS	3.0	97.0	100.0

85.3% of original grouped cases correctly classified.

Table 8.14 shows the predictive accuracy of the discriminant function which would classify 85.3% of cases correctly although it is noticeably more accurate at identifying DMS rather than NVQ participants.

8.3.3 Discriminant Analysis for Learning Styles

A discriminant analysis using the four variables representing learning styles produced no discriminating variables either between the successful NVQ group and those who did not complete the NVQ or between the successful NVQ group and the successful DMS group.

8.3.4 Discriminant Analysis for Personal Competencies – NVQ Groups

The results of the discriminant analysis on personal competencies for the NVQ groups are shown in Tables 8.15 – 8.17. As with the ANOVA analyses, a combined value for the competencies was used which incorporated normative and ipsative scores and self-ratings by the participants with ratings by their managers where available.

The analysis identified two personal competencies as discriminating variables between successful NVQ participants and those who did not complete. As shown in Table 8.15, these were *Leadership* and *Written Communication.* Examination of the means for each group in Appendix 13, Table 3 shows that successful NVQ participants rate more highly on the competency of *Leadership* with a mean of 13.7

compared with 11.0 for those who did not complete. Successful NVQ participants also rate more highly on the competency of *Written Communication* with a mean of 11.8 compared with 10.4 although the difference is less marked.

Table 8.15 Discriminating variables in the analysis for personal competencies Successful NVQ v NVQ Non-completers

Variables Entered/Removed

Step	Entered	Wilks' Lambda								Standardised Canonical Discriminant Function Coefficient
		Statistic	df1	df2	df3	Exact F				
						Statistic	df1	df2	Sign.	
1	IMC01	.847	1	1	63	11.41	1	63	.001	0.973
2	IMC08	.739	2	1	63	10.97	2	62	.000	0.745

At each step, the variable that minimises the overall Wilks' Lambda is entered.
a Maximum number of steps is 32.
b Minimum partial F to enter is 3.84.
c Maximum partial F to remove is 2.71.

Table 8.16 Structure matrix for personal competencies (combined ratings) Successful NVQ v NVQ non-completers

Variable	Function 1
IMC01 LEADERSHIP	.715
IMC08 WRITTEN COMMUNICATION	.408
IMC13(a) INTERPERSONAL SENSITIVITY	.286
IMC06(a) PROBLEM SOLVING & ANALYSIS	-.227
IMC07(a) ORAL COMMUNICATION	.197
IMC05(a) SPECIALIST KNOWLEDGE	-.186
IMC03(a) QUALITY ORIENTATION	.153
IMC04(a) PERSUASIVENESS	.151
IMC14(a) FLEXIBILITY	-.142
IMC12(a) STRATEGIC	.137
IMC10(a) CREATIVITY & INNOVATION	-.114
IMC16(a) PERSONAL MOTIVATION	-.112
IMC09(a) COMMERCIAL AWARENESS	-.100
IMC11(a) ACTION ORIENTATION	.075
IMC15(a) RESILIENCE	.029
IMC02(a) PLANNING & ORGANISING	-.027

Pooled within-groups correlations between discriminating variables and standardised canonical discriminant functions
Variables ordered by absolute size of correlation within function.
(a) This variable not used in the analysis.

Table 8.17 Classification results for personal competencies
Successful NVQ v NVQ non-completers

		Course group	Predicted Group Membership		Total
			NVQ A	NVQ B	
Original	Count	NVQ A	27	8	35
		NVQ B	8	22	30
	%	NVQ A	77.1	22.9	100.0
		NVQ B	26.7	73.3	100.0

75.4% of original grouped cases correctly classified.

The value of 0.739 for Wilks' Lambda shows that 73.9% of the variance between the groups is not explained by these two variables. Although this is a fairly high proportion, it is to be expected when only two discriminating variables are identified out of sixteen competencies. The value for chi-square of 18.78 does however, confirm significant differences between the groups. Box's M test for equal population covariance matrices was 3.5 at a significance level of 0.337 so there is no significant difference in the covariance matrices between the groups.

The structure matrix is included in Table 8.16. It can be seen from the discriminant loadings that the two discriminating variables of *Leadership* and *Written Communication* score markedly higher than the other competencies in their contribution to the discriminant function. The Standardised Canonical Discriminant Coefficients are shown in Table 8.15.

The classification matrix in Table 8.17 shows that the discriminant function would enable 75.4% of cases to be classified correctly.

For the purposes of comparison, a discriminant analysis was also carried out for personal competencies using variables based on self ratings only. In this case the variable was the sum of the normative and ipsative scores. The analysis identified the same two discriminating variables of *Leadership* and *Written Communication* with similar discriminant coefficients. The structure matrix is included in Appendix 18.

A check was carried out on whether the number of variables had any effect on the analysis. Thus three separate discriminant analyses were carried out as follows:

1) Competencies 01 – 06 - 6 variables.
2) Competencies 07 –11 - 5 variables.
3) Competencies 12 – 16 - 5 variables.

The first analysis identified two discriminating variables, these being *01 Leadership* and *06 Problem Solving & Analysis.* The second analysis produced no discriminating variables. The third analysis identified one discriminating variable, *13 Interpersonal Sensitivity.* Thus a further analysis was performed with these three variables plus variable *08 Written Communication* as this was identified in the full analysis. The result was that two discriminating variables were identified from the four, these being *01 Leadership* and *08 Written Communication.* This was the same result as that in the original discriminant analysis with all 16 competencies. Hence the number of variables in the analysis did not affect the overall result.

8.3.5 Discriminant Analysis for Personal Competencies – Successful NVQ v DMS

The final analysis was a comparison between the successful NVQ group and the successful DMS group. The results are shown in Tables 8.18 – 8.20.

Table 8.18 Discriminating variables in the analysis for personal competencies Successful NVQ v Successful DMS

Variables Entered/Removed

Step	Entered	Wilks' Lambda								Standardised Canonical Discriminant Function Coefficient
		Statistic	df1	df2	df3	Exact F				
						Statistic	df1	df2	Sign.	
1	IMC01	.826	1	1	65	13.70	1	65	.000	0.898
2	IMC16	.758	2	1	65	10.24	2	64	.000	-0.590

At each step, the variable that minimises the overall Wilks' Lambda is entered.
a Maximum number of steps is 32.
b Minimum partial F to enter is 3.84.
c Maximum partial F to remove is 2.71.

Table 8.19 Structure matrix for personal competencies Successful NVQ v Successful DMS

Variable		Function 1
IMC01	LEADERSHIP	.812
IMC16	PERSONAL MOTIVATION	-.460
IMC13(a)	INTERPERSONAL SENSITIVITY	.329
IMC11(a)	ACTION ORIENTATION	-.233
IMC09(a)	COMMERCIAL AWARENESS	-.218
IMC08(a)	WRITTEN COMMUNICATION	-.178
IMC10(a)	CREATIVITY & INNOVATION	-.112
IMC12(a)	STRATEGIC	.081
IMC14(a)	FLEXIBILITY	-.071
IMC04(a)	PERSUASIVENESS	-.039
IMC06(a)	PROBLEM SOLVING & ANALYSIS	.036
IMC03(a)	QUALITY ORIENTATION	.033
IMC15(a)	RESILIENCE	.021
IMC05(a)	SPECIALIST KNOWLEDGE	.018
IMC07(a)	ORAL COMMUNICATION	.003
IMC02(a)	PLANNING & ORGANISING	.002

Pooled within-groups correlations between discriminating variables and standardised canonical discriminant functions
Variables ordered by absolute size of correlation within function.
(a) This variable not used in the analysis.

Table 8.20 Classification results for personal competencies
Successful NVQ v Successful DMS

		Course group	Predicted Group Membership		Total
			NVQ A	DMS	
Original	Count	NVQ A	25	10	35
		DMS	11	21	32
	%	NVQ A	71.4	28.6	100.0
		DMS	34.4	65.6	100.0

68.7% of original grouped cases correctly classified.

The analysis again identifies two discriminating variables between the successful NVQ group and the successful DMS group. The first is the competency of *Leadership*. As with the comparison with the NVQ non-completers, the successful NVQ group exhibited higher ratings for *Leadership* with a mean of 13.7 compared with 11.1 for the DMS group. The second discriminating variable was *Personal Motivation.* In this case, however, the successful NVQ group exhibited a lower mean rating at 10.6 compared with 12.4 for the DMS group.

As with the two NVQ groups, the value for Wilks' Lambda was relatively high at 0.758. Again the chi-square value of 17.76 with a significance of 0.000 confirms that there are significant differences between the groups.

The structure matrix in Table 8.19 shows the relative contribution of each variable and again *Leadership* scores significantly more highly than the other variables. Table 8.18 shows the Standardised Canonical Discriminant Coefficient to be 0.898 for Leadership compared with –0.590 for the second variable Personal Motivation.

The classification matrix in Table 8.20 shows that the discriminant function would classify 68.7% of cases correctly.

8.4 Summary of Chapter 8

In this chapter, the results of two methods of analysis which explore the differences between groups have been presented. The analysis of variance (ANOVA) between groups showed that external influences did have an impact on participants. Those who successfully completed the NVQ programme felt that they received more encouragement from the course group and also from home. Successful NVQ participants also rated more highly the importance of the objective 'to improve work performance' in their reasons for enrolling on the programme than both the NVQ non-completers and the successful DMS participants. NVQ participants who did not make any significant progress (the non-completers) rated their workload as more demanding than those who completed. It is difficult to know, however, whether this is actually the case, whether it is a reflection of their ability to handle their workload or whether they are consciously or subconsciously rating this more highly as a justification for not making progress. This will be discussed further in later chapters.

The result of a t-test on the three NVQ specific variables showed that the perception of the importance of the NVQ award was higher among the successful NVQ group compared with those NVQ participants who did not make significant progress.

The discriminant analysis generally supported these findings and identified two additional discriminating variables, these being the flexibility of submission dates and support from the line manager

No difference was found by the ANOVA in Learning Styles between the three groups. However, both the ANOVA and the discriminant analysis identified successful NVQ participants as being more highly rated in the personal competence of *Leadership* than either the NVQ non-completers or the successful DMS group. Secondary differentiating variables identified were *Interpersonal Sensitivity* by the ANOVA and *Written Communication* by the discriminant analysis.

In the next chapter the results of the analyses of chapters 7 and 8 are discussed in more detail.

CHAPTER 9: DISCUSSION OF RESULTS

9.1 Introduction

In the previous two chapters the results of four quantitative analyses were presented. The correlation analysis and the factor analysis in Chapter 7 explored the relationships between the variables whilst the ANOVA and the discriminant analyses in Chapter 8 examined the relationships between the groups.

This chapter will discuss the results of these analyses and their interpretation under five headings representing the logic of the model in Figure 6.1 and the different groups of variables and hypotheses presented in section 6.3. These five headings are:

- Entry Characteristics
- External Influences
- Initial Goal Orientation
- Learning Style
- Personal Competencies.

9.2 Entry Characteristics

The entry characteristics collected from the research sample were limited to age and sex. Though many studies with undergraduate students have shown that the best predictor of success is secondary school performance (Sanford, N, 1962; Pantages & Creedon, 1978, Entwistle, 1977), there is no similar evidence for postgraduate/post-experience courses. In his study of 1072 DMS students, Bond found that:

"Differences in educational qualifications and experience seems to have little influence on whether a student completes the course." *(Bond, 1988, p18)*

In view of the wide range of qualifications that NVQ and DMS participants brought to the course, a detailed analysis of entry qualifications was considered to be outside the scope of this study.

With regard to age, the study found no difference between the ages of any of the three groups. The overall age range was 24 to 54 years and the overall mean was 40.1 years. The means for the three groups were 40.5, 39.7 and 40.0 respectively. The minimum age of the DMS group was a little higher than the other two groups at 29 years.

Whilst some studies with undergraduate students have found that older students have a greater tendency to drop out (Entwistle, 1977; Pantages & Creedon, 1978), caution has been expressed in the interpretation of these results. The reasons that caused students to delay their entry to higher education were often still present and continued to cause problems. In Bond's (1988) study of DMS students, a comparable group to this research, he found no significant difference in the age of successful students and those who did not complete.

Bond also found no significant difference in the gender of successful students and those who left early. Interestingly, however, Table 7.0 suggests a difference here between DMS and NVQ participants. Whilst the proportion of males to females is approximately the same for the DMS and the total NVQ group, the percentage of females is higher in the successful NVQ group. Thus 43% of the successful NVQ group were females compared with 23% of the NVQ group who did not make any significant progress and 36% of the successful DMS group. This does therefore suggest that women showed a higher rate of persistence than men on the NVQ programme.

Other research studies have been inconclusive in their findings of dropouts between the sexes though it has been shown that women drop out less for academic reasons and more for non-academic reasons making attrition rates similar (Pantages and Creedon, 1978, p 58).

9.3 External Influences: Comparison between successful and unsuccessful NVQ groups

9.3.1 Flexibility of submission dates

Hypothesis 1 – Flexibility in submission dates

H_1: Less flexibility in submission dates for assessed work has a positive effect on completion.

When NVQ programmes were introduced, one of the key features was the flexibility of the programme. Assessments were based on work-based evidence of competence so there was no need to have fixed submission dates for assessed work linked to the teaching of a particular subject in class. Participants could plan their development to suit their own time scale and to fit in with work and other demands. In practice, this 'strength' of the programme also turned out to be a significant weakness. Participants used to working to deadlines at college and at work found that it was too easy to put off compiling their portfolio in the face of other pressures, both from work and home. Thus as experience grew with the programme, the course team reduced the flexibility and required participants to submit a specific number of units for assessment each year. In some cases, NVQ assessment was linked to other courses such as the Health and Social Services Certificate/Diploma which, again, required specific submission dates. In later courses, for example a hospital in-house course, participants were required to complete in a given period.

This research confirms the importance of this variable. The discriminant analysis identifies *Flexibility of submission* as a discriminating variable at a significance level of 0.000. However it should be noted that the successful NVQ group still had a high degree of flexibility with 24 out of 35 participants having flexibility compared with 29 out of 30 for the non-completers.

This finding was also supported by the results of the individual interviews as discussed in section 5.3.4. Interviewees generally supported the idea of deadlines for submission of work, one successful participant commenting that the introduction of

deadlines was "the best thing the Business School did". The response that typifies this view was:

"It's OK saying that you need flexibility, but I think you need deadlines to actually make yourself do it because you would always find that you have other things to do".

Thus the evidence of this research supports this hypothesis:

H_1: Less flexibility in submission dates for assessed work has a positive effect on completion. Supported

9.3.2 Degree of Support

Hypothesis 2 – Degree of Support

$H_{2.1}$: A higher Degree of Support from the organisation has a positive effect on completion.
$H_{2.2}$: A higher Degree of Support from the participant's line manager has a positive effect on completion.
$H_{2.3}$: A higher Degree of Support from the course group has a positive effect on completion.
$H_{2.4}$: A higher Degree of Support from home has a positive effect on completion.

Degree of support in the model is divided into two components – support from employer and support outside work.

The two variables comprising support from employer were *Support from line manager* and *Support from the organisation.* These two variables correlated quite highly in the correlation analysis with a Pearson correlation coefficient of 0.70 at the 1% level of significance. Similarly the factor analysis grouped the two variables together as the first factor. Thus there would appear to be a strong case for linking these two variables together as the single construct of ***Employer support.*** However, the analysis of variance (ANOVA) test picked out a difference between the two NVQ groups on the variable *Support from line manager* but not for the variable *Support from the organisation.* Similarly, the discriminant analysis identified *Support from*

line manager as a discriminating variable between the two NVQ groups but *not Support from the organisation.* Also, when the combined variable ***Employer support*** was used in the discriminant analysis, it was not identified as a discriminating variable.

Examination of the means for the two variables as shown in Table 8.1 explains this difference. The mean rating for *Support from line manager* for NVQA, the successful NVQ group is 4.29 compared with 3.73 for NVQB, those who did not make significant progress. Indeed, the mean for the successful NVQ group would be higher if the outlier in this group were removed (see section 7.1) For *Support from employer* the corresponding means are 4.26 and 4.03. Thus although the two variables are correlated significantly, there is a greater difference in the level of perceived support from the line manager than there was in support from the organisation between the two groups.

This finding was supported by the responses from participants in the interview programme. The managers of the successful NVQ participants did seem to take a more active interest in the programme by discussing progress, activities and impact on the workplace. It was also noted that the unsuccessful NVQ participants seemed to expect more time to be given at work in order to complete their portfolios. This did not appear to be an issue with the successful NVQ participants or the DMS group. These two groups were prepared to take their coursework home to do in their own time. The unsuccessful NVQ participants were either unwilling or unable to do this. For those interviewed, there was a distinct difference in the attitude of the two groups on this issue, although the numbers interviewed from each group were too small for the results to be conclusive in themselves. They do help, however, to illuminate the findings from the questionnaires.

With regard to general support from the organisation, the majority of unsuccessful NVQ participants still considered the organisation as supportive. This was because the organisation had sponsored their attendance on the programme and, in many cases, was taking active steps to try and help participants to complete.

Thus the evidence of this research supports hypothesis $H_{2.2}$ but not $H_{2.1}$.

$H_{2.1}$: A higher Degree of Support from the organisation has a positive effect on completion. Not supported

$H_{2.2}$: A higher Degree of Support from the participant's line manager has a positive effect on completion. Supported

The other component of support was support from outside work. The two variables here were *Support from group* and *Support from home*. The correlation analysis showed a degree of correlation between the two variables with a Pearson coefficient of 0.37 at the 1% level of significance. The factor analysis also grouped these two variables together although the reliability was marginal with a Cronbach Alpha value of 0.50 (see Table 7.6). Whilst there is no obvious reason why support from the course group should correlate with support from home, it is possible that there is an underlying factor here related to 'persuasiveness' or 'leadership' of the participant. Thus the participant is able to carry others with him/her and gain their support through a particular personality attribute.

Both the ANOVA and the discriminant analysis identified these two variables as discriminating between successful NVQ participants and those who did not make significant progress with the successful participants receiving more support from both the course group and from home.

The importance of support from the course group was identified in the interview programme although the distinction between the groups was not so clear cut and the sample, of course, was smaller. Some successful NVQ participants succeeded despite the attitude of the rest of the group. Unsuccessful participants, however, were more affected by any negative attitudes that were present. It did seem that some NVQ groups had a small number of strongly negative participants who felt that they had been 'press-ganged' into taking the course and this did have an influence on the rest of the group.

Again, successful NVQ participants in the interviews made less of the importance of support from home although three of the four unsuccessful participants found that a busy home life was in conflict with making progress on the course.

Thus the evidence from this research supports hypotheses $H_{2.3}$ and $H_{2.4}$:

$H_{2.3}$: A higher Degree of Support from the course group has a positive effect on completion. Supported

$H_{2.4}$: A higher Degree of Support from home has a positive effect on completion. Supported

One can draw parallels with these findings and Kember's (1995) model of student progress on open learning courses (see section 3.7.1). Kember's construct of 'social integration' represents the degree to which students are able to integrate their academic study with employment, family and social requirements. His two-track model suggests that some students take the lower, negative track where they have greater difficulties in achieving social and academic integration. This negative approach was very apparent in some of the unsuccessful NVQ participants and also reflected a tendency to blame other factors.

Tinto (1993) also acknowledged the importance of external commitments in his studies with full time undergraduate students. When students participated in communities external to the college (e.g. family, work and community), if these communities are strong, as they are with commuting students, these external events may influence departure indirectly via their impact on integration or directly via their effect on external commitments pulling them away. At the same time, Tinto recognised that external communities, for instance the family, may reinforce persistence.

Similarly, Christie and Dinham (1991) found that external commitments were a stronger influence on persistence than indicated by Tinto's model although, in their case, their findings were based on undergraduate students who maintained links with high school friends.

9.3.3 Workload

Hypothesis 3 - Workload

H_3: A high Work Load has a negative effect on completion.

The workload of participants was assessed in two ways. Participants were asked to give the average total number of hours worked per week in their job during the course. However, a simple measure of number of hours worked is not sufficient to assess the demands that a job places on the participant. For example, a ward sister in a busy hospital considered her job to be very demanding but the hours worked were 37 hours per week. Consequently participants were also asked to rate how demanding their work load was on a five point scale from undemanding to extremely demanding.

Workload was considered to be very demanding by NVQ non-completers with a mean rating of 4.47 on the five-point scale compared with 3.97 for those who did complete. Similarly the number of hours claimed to be worked by non-completers was higher with a mean of 45.6 compared with 43.1 for the successful group although the difference is not large.

The rating for workload was identified as a discriminating factor between the two groups by both the ANOVA with a significance level of 0.011 and the discriminant analysis at a significance level of 0.000.

In the interview programme, most of those interviewed considered that they had a fairly demanding workload and the overall mean of 4.1 for the full sample reflects this. Some participants were able to cope with this workload and do the coursework on top by working evenings and weekends. The NVQ non-completers were either unwilling or unable to do this.

Thus the research suggests that this hypothesis is supported:

H_3: A high Work Load has a negative effect on completion. Supported

However, I believe that this finding needs to be treated with a great deal of caution. Undoubtedly work pressures will have an effect on the ability of participants to complete the course as indicated by other research studies discussed in Chapter 2. Munn et al (1992) observed that part-time students experienced many competing demands on their time and particularly work pressures. Nevertheless, as discussed in paragraph 2.8.2, the concepts of attribution theory and locus of control suggest that less successful participants will tend to blame external factors. Work pressure is the easiest target.

A study at Liverpool John Moores University identified work commitments as a significant contributory factor in the case of 59 per cent of non-completing part-time students (McGivney, 1996).

However it is worth repeating here a conclusion from Bond's research (1988) on DMS students:

"Students' perceptions of the effects of pressure of work on their progress with the DMS is a personal factor, which is not explained (taking the group as a whole) by measurable differences between their jobs and the jobs of students who remain on the course. Common experience, in any case, suggests that students respond to, and cope with, such pressures in different ways, and a student who is under pressure at work does not seem to be at significantly greater risk of leaving the course. One qualification to this comment is that self-employed students (although there were too few of them in this survey to follow up the issue) are particularly likely to drop out.

(Bond, 1988, p18)

Kember (1995) also introduced the concept of 'external attribution' to his model. He argued that failure to find ways to integrate study with on-going commitments means that it is easy to blame the competing work, family and social pressures for the lack of integration. He observed that reasons given for dropping out almost invariably cite some external cause of which 'insufficient time' seemed to be the most common.

Thus, whilst the hypothesis is supported by this research and is a logical finding, I believe that the issue is more complex and linked to personal characteristics. It is worthy of further examination.

9.3.4 Perception of Qualifications

Hypothesis 4 – Perception of Qualifications

$H_{4.1}$: A positive perception of NVQs by the participant will have a positive effect on completion.
$H_{4.2}$: A positive perception of NVQs by the participant's organisation as seen by the participant will have a positive effect on completion.
$H_{4.3}$: A positive perception of management qualifications by the organisation as seen by the participant will have a positive effect on completion.

The participant's perception of NVQs was measured by two items in the questionnaire:

- *NVQ currently more important than University award*
- *NVQ will be more important than University award in future.*

These two variables showed a significant degree of correlation with a Pearson correlation coefficient of 0.540 at the 1% significance level. They were also identified as a single factor in the factor analysis. Despite this correlation, both the ANOVA and the discriminant analysis only picked out the variable *Importance of NVQs now* as a discriminating variable between the two NVQ groups thus reflecting a difference in the level of rating for the two variables between the groups. The mean for this variable for the successful NVQ group was 3.0 – a mid-point rating. Thus, on average, successful NVQ participants neither agreed nor disagreed with the statement that 'NVQs are currently more important than a University award'. The mean for the NVQ non-completers, however, was 2.4 suggesting that this group did not yet believe that the NVQ was as important as the University awards. The means were closer for the future importance of the NVQ with a mean rating of 3.3 for the successful NVQ group and 3.0 for the non-completers. Thus there was some feeling

that NVQs would become more important but no strong view that they would be replacing traditional University awards.

These findings were supported by the individual interviews. As discussed in section 5.3.3 no strong pattern emerged. The attitude of successful participants was mixed with two interviewees considering that the NVQ was more important than the University award and two taking the opposite view. There was, however, a general view from all interviewees that NVQs would increase in importance in the future.

The perception of the organisation's support for NVQs also correlated highly with the perception of the organisation's support for management qualifications generally. The correlation coefficient was 0.821 at the 1% significance level. Again, these two variables were identified as a single factor in the factor analysis. However, neither the ANOVA nor the discriminant analysis identified any significant differences between the two NVQ groups in these variables. Most participants rated these two variables around the mid-point of the scale – a rating of 'important' in response to the question 'How does your organisation rate the importance of a) NVQs in management and b) management qualifications generally.'

As most of the NVQ participants were on in-house, company sponsored programmes, one would expect participants on these programmes to feel that their company considered management qualifications important. The interview programmes suggested that, predictably, participants not on company sponsored programmes perceived their organisation as fairly neutral in terms of their attitude towards these qualifications.

Thus the research indicates that hypothesis $H_{4.1}$ is supported since the successful NVQ participants did have a more positive view of NVQs than the non-completers This finding does have to be qualified, however. Firstly it reflects the perception of the current importance of NVQs since there was no significant difference between groups in terms of the perception of future importance of NVQs. Secondly, the importance of NVQs is rated against the importance of the University award. Successful NVQ participants rated these as equally important whereas the SNQ non-

completers rated NVQs as less important than the University award. $H_{4.2}$ or $H_{4.3}$ are not supported

$H_{4.1}$: A positive perception of NVQs by the participant will have a positive effect on completion. Supported

$H_{4.2}$: A positive perception of NVQs by the participant's organisation as seen by the participant will have a positive effect on completion. Not supported

$H_{4.3}$: A positive perception of management qualifications by the organisation as seen by the participant will have a positive effect on completion. Not supported

This finding is generally in accordance with both Metzner and Bean's (1987) study and Kember's (1995) model. Metzner and Bean included 'Utility' as a psychological outcome representing the student's perception of the value of the course that they were taking. Kember included a component in his model representing a cost/benefit analysis. Thus students were considered to continually balance the value of the course that they were taking with the costs in terms of time and effort involved, disruption to home life, etc. A low perception of the importance of NVQs would lower the value of the programme and hence lead to higher dropout.

9.4 External Influences: Comparison with NVQ and DMS groups

The ANOVA showed that there were differences between the successful NVQ group and the successful DMS group in three variables, these being:

- *Support from line manager*
- *Support from group*
- *Support from home.*

Support from the line manager was less for the DMS group, a reflection perhaps of the fact that more DMS students take the course as a result of their own initiative. All DMS participants applied to enrol as individuals whereas many of the NVQ participants attended in-house programmes. However, although the level of support

from the line manager was only equivalent to that of the NVQ non-completers, they were still successful in the course.

In contrast, the degree of support from outside work was higher for DMS students than either of the NVQ groups. The mean rating for *Support from the course group* was 4.3 compared with 4.0 for the successful NVQ and 3.5 for the non-completers. For *Support from home* the mean rating was 4.1 compared with 3.7 and 2.5 for the NVQ groups respectively.

These results were supported by the discriminant analysis which identified three discriminating variables between successful NVQ and DMS groups. These were:

- *Flexibility of submission*
- *Support from organisation*
- *Support from home.*

Thus successful NVQ participants received more support from their line manager than their DMS counterparts but the DMS group generally received more support from outside work through the course group and from home. This was also noted from the interviews. DMS participants particularly commented on the level of support from the course group. There is a significant difference here between the structure of the two programmes. The DMS group meet weekly for lectures and tutorials and therefore have more opportunity to build up a group culture. They also work on the same material and assignments at the same time so there is more opportunity for mutual support and collaboration. The NVQ group meet approximately every six weeks and may all be working on different units, thereby restricting the opportunity for working together.

DMS participants in the interviews were also more positive about the support received from home whereas the successful NVQ group made less of this factor. Again there is a difference between the two groups in that the DMS requires more time on assignments which need to be done outside work. A significant part of the

NVQ portfolio is based on work-based evidence of competence which needs to be initially compiled at work.

The third discriminating variable was that of *Flexibility of submission* for coursework This, however, was identified as a given difference between the two types of course and has already been discussed.

9.5 Initial Goal Orientation: Comparison between successful and unsuccessful NVQ groups

Hypothesis 5 – Initial Goal Orientation

$H_{5.1}$: Successful candidates will rate the importance of the objective 'to achieve a qualification' more highly than those who did not complete.

$H_{5.2}$: Successful candidates will rate the importance of the objective 'to improve job performance' more highly than those who did not complete.

$H_{5.3}$: Successful candidates will rate the importance of the objective 'to improve chances of career progression' more highly than those who did not complete.

$H_{5.4}$: The combined rating scores for successful candidates will be higher than for those who did not complete.

The analysis identified a correlation between the two objectives of 'to achieve a qualification' and 'to improve chances of career progression' at a significance level of 1% although the Pearson correlation coefficient was only 0.35. Thus it does appear that these two objectives are linked in participant's minds although the relatively low coefficient shows that they are not the same. Similarly, the factor analysis linked these two variables into a single factor but only at a marginal Cronbach Alpha value of 0.52.

Both the ANOVA and the discriminant analysis identified *objective to improve job performance* as the variable distinguishing between the successful NVQ and the non-completers. The successful participants rated the importance of this objective more highly with a mean rating of 4.0 compared with the mean for the unsuccessful group of 3.5. There was no significant difference between the groups in the other

objectives. However there was also a significant difference at the 0.009 level between the two NVQ groups in the combined variable for objectives which added all the ratings for objectives together. The successful NVQ group generally rated objectives more highly with a mean of 3.9 compared with 3.4 for the non-completers.

Since a rating of 3 is 'important' and 4 is 'very important', we cannot read too much into this small difference between the two groups. It does, however, appear that successful NVQ participants were more concerned that the NVQ programme would enable them to improve their work performance than were the non-completers. Also, the successful NVQ participants did rate their objectives more highly than those who did not complete.

$H_{5.1}$: Successful candidates will rate the importance of the objective 'to achieve a qualification' more highly than those who did not complete.

Not supported

$H_{5.2}$: Successful candidates will rate the importance of the objective 'to improve job performance' more highly than those who did not complete.

Supported

$H_{5.3}$: Successful candidates will rate the importance of the objective 'to improve chances of career progression' more highly than those who did not complete. **Not supported**

$H_{5.4}$: The combined rating scores for successful candidates will be higher than for those who did not complete. **Supported**

Goal orientation appears as a variable in most of the models on student attrition (Tinto, 1993; Metzner and Bean,1987; Kember,1995). Metzner and Bean found in their study of part time freshman commuter students that those with higher goals were less likely to leave. Thus one might expect that those with a wider range of objectives as represented by the combined score for objectives in this research would be more likely to complete as was, in fact, the case. Kember's cost benefit analysis suggests that students constantly assess the benefits of the programme (i.e. value of the objectives) against the costs of participating and completing the course.

The model developed for this research specifically refers to Initial Goal Orientation. This is because it is recognised that, as the student progresses through the course, these initial objectives will be moderated by the external influences discussed earlier, a view supported by Kember (1995). It is therefore the interplay between the initial objectives and these external moderating influences that is of interest.

9.6 Initial Goal Orientation: Comparison between successful NVQ and DMS groups

It is interesting to note that there is a difference at the 0.012 level of significance between the successful NVQ and the DMS groups in the variable *Objective to improve job performance* with a mean rating for the NVQ group of 4.03 compared with 3.45 for the DMS (an almost identical rating as for the unsuccessful NVQ group at 3.47). This suggests that successful NVQ participants do see the NVQ as more job related – one of the major features of the NVQ programme.

Although the mean value for the combined ratings for objectives is higher for the successful NVQ group at 11.7 compared with 11.0, the difference is not significant at the 5% level. Also there is no significant difference between the combined ratings for the DMS and the NVQ non-completers for which the mean was 10.3.

9.7 Learning Styles: Comparison between all groups

Hypothesis 6

H_6: The learning style of successful candidates will be significantly different from those that fail to make significant progress.

There was found to be no significant difference in learning styles between any of the three groups. Since the Reflector style correlated significantly with the Theorist style – the most common combination according to Honey and Mumford (1992) – an analysis of variance was also carried out on a combined variable derived by summing these two scores. Again there was no significant difference.

This is a somewhat surprising finding as people with different learning styles have been shown in other studies to relate to different kinds of activity (Honey and Mumford, 1992). The way a person learns has also been shown to be a factor in success on open learning courses (Bossons, 1988) although in this study a different model of learning was used.

One possible explanation for the lack of difference between the groups in this research is that the compilation of the participant's portfolio may be separated from the learning process. Some viewed the portfolio as a bureaucratic paperwork exercise whereas others used the management standards as a useful vehicle for learning. Thus compiling the portfolio tended to be viewed as a straightforward task rather than a learning opportunity.

Thus on the evidence of this research, hypothesis H_6 is not supported.

H_6: The learning style of successful candidates will be significantly different from those that fail to make significant progress. Not supported

9.8 Personal Competencies: Comparison between successful and unsuccessful NVQ groups

The factor analysis on the sixteen competencies in the Saville & Holdsworth model did produce seven factors as discussed in section 7.3.3. However the KMO measure of reliability was very marginal at 0.486 compared with the generally accepted level of 0.5. Hence the comparison between groups was made using the full sixteen competencies.

The hypotheses for personal competencies listed in section 6.3.4 identified seven competencies with a clear relevance to completion. These were:

Planning and Organising
Quality Orientation
Action Orientation

Strategic
Flexibility
Resilience
Personal Motivation.

This research did not identify any significant difference between successful NVQ participants and those who did not complete in any of these competencies.
Six competencies were listed as having a possible relevance to completion, these being:

Leadership
Persuasiveness
Problem Solving & Analysis
Written Communication
Creativity & Innovation
Interpersonal Sensitivity.

The ANOVA identified a difference between the successful NVQ group and the non-completers in two of these competencies – *Leadership* and *Interpersonal Sensitivity.*

Those who completed the NVQ programme successfully scored more highly on *Leadership* with a mean score of 13.7 compared with 11.0 for the non-completers. The significance level was 0.002.

Similarly, successful NVQ participants scored more highly on *Interpersonal Sensitivity* with a mean of 13.3 compared with 11.3 and at a significance level of 0.041.

The discriminant analysis identified two discriminating variables, these being *Leadership* and *Written Communication.*

Thus there is a clear difference between the groups in the score for the competency of *Leadership* which is identified by both methods of analysis. Successful NVQ

participants do score more highly on this competency. The hypothesis for this variable is therefore supported at the 0.001 level of significance.

H_{14}: Participants who have completed will have a higher score for the competency of Leadership. Supported

Based on the results of the ANOVA, hypothesis H_{19} can also be supported.

H_{19}: Participants who have completed will have a higher score for the competency of Interpersonal Sensitivity. Supported

The discriminant analysis also identified *Written Communication* as a discriminating variable. This competency could not be subjected to the usual Tukey HSD test in the ANOVA because of unequal variances between the groups. The alternative test using the Dunnett T3 test is not so sensitive and did not identify a significant difference at the 5% level. However, based on the discriminant analysis, H_{17} can be supported at the 5% significance level.

H_{17}: Participants who have completed will have a higher score for the competency of Written Communication. Supported

The remaining hypotheses for personal competencies are not supported as no significant difference was found between the successful NVQ group and the non-completers.

The fact that none of the initial seven competencies hypothesised as having a clear relevance to completion emerged as discriminating variables between the successful NVQ group and the non-completers is extremely surprising. These competencies were, to a greater or lessor extent, identified as relevant to completion by those participants who were interviewed. Some of the competencies were also suggested by other research. For example, Bossons (1988) found that 'Strategic Approach' correlated with success in open learning programmes and it might therefore be expected that this competency would be rated differently for the two NVQ groups. Although there were differences between the means for the two groups with the

successful NVQ group scoring higher on four out of the seven competences hypothesised as having a clear relevance to completion, none of these were significant at the 5% level. Further research with larger numbers may note a difference.

However, the research shows that there are differences between the successful NVQ participants and the non-completers in the three competencies of Leadership, Written Communication and Interpersonal Sensitivity. This therefore supports the belief that personal characteristics do have an influence on completion and consequently identifies a shortfall in models of attrition such as Tinto's (1993) and Kember's (1995) which ignore the importance of this factor.

The key quality of leadership helps explain the successful participants' reaction to the external influences which come to bear during the course of the programme. Thus the participant with a higher competency in leadership will tend to carry others with him/her. Hence they are able to elicit more support from the course group because they in fact exert more leadership within the group. In a similar way, they are able to generate more support from home.

It is interesting also that Written Communication emerged as an important competency for successful participants. The method of assessment was a paper-based portfolio that, although not too demanding in terms of literacy, did require participants to put pen to paper and write reports to explain the evidence submitted. This did seem to be a barrier for some of those who did not make any significant progress.

Interpersonal Sensitivity is concerned with the ability to work well with others. This competency therefore also supports leadership skills in the ability to work with others in the course group and to gain their support.

9.9 Personal Competencies: Comparison between successful NVQ and DMS groups

The competency of *Leadership* was also a discriminating variable between the successful NVQ and the successful DMS group. This was again identified by both the ANOVA at a significance level of 0.003 and the discriminant analysis at a level of 0.000 with the successful NVQ group scoring more highly on the scale.

The discriminant analysis also identified *Personal Motivation* as a discriminating variable between the two groups, but in this case, the DMS scored more highly. This suggests that an even higher level of personal motivation is needed to cope with the demands of regular lectures, assignments and examinations experienced on the DMS course than the demands of portfolio compilation on the NVQ programme.

9.10 Summary of Chapter 9

The results of the four analyses reported in Chapters 7 and 8 have been discussed in this chapter under the five headings of entry characteristics, external influences, initial goal orientation, learning style and personal competencies. There was no significant difference in age between the successful NVQ participants and those who did not complete, the means for each group being very similar. It was notable, however, that 43% of the successful NVQ group were female although they only made up one third of the total sample of NVQ participants. Although this suggests a higher perseverance rate for women, the numbers are small and not statistically significant. Further research on this issue would be of interest.

With regard to external influences, the data suggests that the successful NVQ participant received a higher degree of support from their line manager, from their course group and from home than did those who did not complete. They also rated NVQs as more important than did the non-completers. It seems to be that those closest to the participant have the most effect on the participant's perseverance as there was no significant difference between the two groups in terms of organisational

support or the organisation's views of the importance of either NVQs or management qualifications in general.

Successful NVQ participants tended to see the NVQ programme as a way of improving their work performance and rated this objective significantly more highly than the non-completers. They also rated this objective more highly than the successful DMS students reflecting the work-based nature of the programme. As measured by the combined rating for all three objectives, successful NVQ participants did demonstrate more strongly held objectives than the non-completers.

The research findings do suggest that personal competencies can discriminate between completers and non-completers although none of the seven competencies hypothesised as having a clear relevance to completion emerged as statistically significant. Successful NVQ participants scored more highly than those who did not complete in three out of the sixteen competencies on the SHL model. These were Leadership, Interpersonal Sensitivity and Written Communication and each of these had been hypothesised as having a possible relevance to completion. There was no significant difference between the groups in learning style.

CHAPTER 10: CONCLUSIONS

10.1 Personal characteristics and completion for NVQ participants and links with other research

The purpose of this research was to explore the influences that affect participants on NVQ programmes in management and that lead to either completion or failure to make any significant progress. Thus the focus has not just been on those that do not complete as some participants may complete several units and then finish for a variety of reasons. The aim was to identify those who did not make any significant progress. These were the participants who did not complete one unit in the first year of enrolment or who completed no more than one unit after two years of enrolment.

The model representing the influences on completion is shown in Figure 6.1. It suggests that candidates come to the programme with certain entry characteristics such as age, gender, previous experience and qualifications and with individual characteristics, competencies and learning styles. They are motivated to take the programme by certain objectives that may include a desire to achieve a qualification, improve their chances of career progression or to improve their performance at work. During the programme they are exposed to a variety of external influences that affect their progress either positively or negatively. These include the workload that they have to manage in their job in addition to the course requirements. Influences also include the level of support that participants receive from both inside work through their line manager and the organisation generally and outside work through the course group and from their home life. Perceptions of the importance of NVQs in relation to other qualifications such as a traditional university award will also have an effect. Finally, the flexibility of submission dates for assessed work will be an element of the course that will affect the level of pressure that the participants are under to complete in a given period.

The research has explored these factors in relation to NVQ and DMS courses at one academic institution, the Bournemouth University Business School and hence the

generalisability of the results are limited (see paragraph 10.4 for further discussion on generalisability). The general findings are, however, consistent with the previous research findings of, amongst others, Kennedy and Powell (1976) and Cabrera et al. (1992) which suggested that persistence is affected by the interaction of external influences and personal characteristics. The research identified differences between the successful NVQ participants and those that did not make any significant progress in 8 out of the 10 components in the model of Figure 6.1. This lends further support to the view that earlier theories of student persistence that focus on one category of factor such as psychological characteristics, organisational or societal influences are not reflecting the full picture. As Cabrera et al (1992, p158) put it, college persistence is *"the product of a complex set of interactions among personal and institutional factors"* and this is demonstrated in the study. This also parallels studies on organisational performance. For example, Schroder (1989) argued that organisational effectiveness was not just dependent on the characteristics of managers or characteristics of the environment but that it was an interaction of the two.

Although the NVQ programme presents different problems and challenges to participants when compared with other full time and part time courses of study, there are similarities with other research studies as well as differences. Successful participants generally exhibited more strongly held objectives indicating that their initial goal orientation was stronger than those who did not make significant progress. Student motivation represented by Goal Orientation is a common element in most studies covering full time and part time, residential and commuter students (Tinto, 1993; Summerskill, 1962; Metzner and Bean, 1985; Pantages and Creedon, 1978).

The nature of those objectives was also shown to be of significance. Successful NVQ participants demonstrated a greater desire to improve their job performance through the programme compared with those who did not complete. Though not identical in kind, this tends to fit that aspect of Kember's (1995) model that distinguishes between intrinsic and extrinsic motivation. Extrinsic motivation is concerned with the student's commitment to obtaining a qualification. Intrinsic motivation is the interest that the students have in the subject matter for its own sake.

Kember's model indicates that extrinsic motivation increases the chances of dropout. Bossons (1988) also found that extrinsic motivation correlated negatively with success. Although it is arguable whether successful NVQ participants did in fact have an interest in the subject matter 'for its own sake,' it does appear that they had a greater interest in the content as a means to helping them to improve their job performance than those who did not complete. This also relates to the 'cost/benefit' analysis in Kember's model for distance learning students and the concept of 'utility' in Metzner and Bean's (1985) study of non-traditional students (see section 2.14). Kember considered that students continually assessed the benefits of completing their course in terms of the cost (e.g. effort, time) of continuing. If the benefits were insufficient to justify the cost, they dropped out. Metzner and Bean classified utility (the value of the course) and satisfaction as psychological outcomes which they found did affect dropout. Successful NVQ participants perceived more value in the NVQ programme through its ability to improve job performance in addition to the achievement of a qualification.

A key general finding from the study is that personal competencies did play an important part in determining the likelihood that a participant would complete the programme. Successful participants scored more highly on the personal competencies of Leadership, Written communication and Interpersonal Sensitivity.

The definition of the Leadership competency in the IMC model used is 'Motivates and empowers others in order to reach organisational goals'. In order to motivate others one must demonstrate self-motivation so it can be seen how this competency helped successful participants to maintain their motivation to complete the programme. Whilst there is no direct comparison with other studies, it is interesting to note that Dulewicz and Herbert (1999) in their longitudinal study of 72 managers who had attended the Henley General Management Course found that 'Motivating others' correlated significantly with 'Rate of Advancement. Furthermore, Barrick and Mount (1991) demonstrated that Conscientiousness, one of the Big Five personality dimensions, correlated significantly with work proficiency for managers and other occupational groups. Although the exact interpretation of Conscientiousness does vary, the consensus seems to be that it does include the attribute of 'achievement-oriented', which relates to the goal-orientation in the above

definition of Leadership. Other aspects of Conscientiousness include hardworking, persevering and dependability, that is, being careful, thorough, responsible and organised.

The other component in the above definition of Leadership is that of influencing others. This suggests that those scoring more highly on this competency were better able to cope with external influences involving support through their ability to influence others to gain that support. Those scoring lower on Leadership were more likely to be swayed by negative influences from others, either within the course group or at home.

Relationships with others are also reflected in the competency of Interpersonal Sensitivity. This is defined as 'Interacts with others in a sensitive and effective way. Respects and works well with others'. Successful NVQ participants scored more highly in this competency. Nyfield et al. (1995) also found this competency to correlate significantly with overall job performance in their study of 1043 managers in the UK, the USA and Turkey.

The importance of Written Communication was initially surprising because the NVQ process does not demand written assignments in the same way as a traditional taught programme of study. However, the paper-based portfolio approach used in the assessments for this programme required participants to write reports explaining how the evidence submitted met the management standards and reflecting on how they learned from the process. The research therefore demonstrates that this competency is still of significance when this form of assessment is used.

There are differences between the research instruments used in this research and other studies exploring psychological factors such as Heilbrun (1965) and Bossons (1988). This research has used a test of competencies based on behaviour ratings (the Inventory of Management Competencies) whereas others have used personality tests to measure personal characteristics. Heilbrun used the 300-item Adjective Check List (ACL) on 2,149 freshman students and found that those who persisted tended to be more passive and task orientated but that this finding only applied to the higher ability students. Bossons used Cattell's 16PF test and noted that successful

distance learning students tended to be more extroverted. This research does therefore support the general findings of researchers such as Heilbrun (1965), Bossons (1988), Zabel (1995) and others who have identified the significance of psychological factors in student attrition and success although the nature of those factors may be different. As discussed in Section 2.14, psychological models of student attrition dominated the literature for some time before Tinto's interactional model gave a new theoretical direction to attrition research. This research shows that psychological factors are still of relevance. This is therefore a weakness in models such as those of Tinto (1993) and Kember (1995) that ignore these factors.

No significant difference was found in Learning Styles between the successful group and those that did not make any progress. This finding is a little surprising in view of the body of research that demonstrates that people learn in different ways and learn better from different kinds of activities (Bossons, 1988; Kolb, 1991; Honey and Mumford, 1992; Porteus, 1997). A possible explanation for this is that there is less emphasis on learning in the NVQ programme than in a conventional course. As indicated in paragraph 1.4, the focus is on the assessment of competences against the MCI Management Standards. This assessment was independent of the method of learning that participants experienced to meet the standards required. Such learning was not under the control of the Business School and may have been provided by the client organisation or other training provider. Also the amount of learning that took place was variable depending on the participant's competences at the start of the programme. For a manager already competent against the standards, there would be relatively little learning. For others less competent at the start, learning would be more significant. Thus this research may indicate that the Learning Styles Questionnaire is not a factor affecting completion on assessment-driven NVQ courses in management. Further research would be needed to test the relationship between learning styles and completion on more learning oriented courses. It is worth noting that Beaty (1994) in a doctoral research study on students at the University of Illinois did not find any significant relationships between learning style and attrition using Kolb's Learning Styles Inventory. However, the limitations orf the LSI were discussed in paragraph 2.8.4.

The fourth internal quality in the model of influences refers to the entry characteristics of course participants. It was considered to be outside the scope of this research to collect data on qualifications and experience prior to joining the programme. This was because the philosophy of the NVQ scheme was to provide as open access as possible. Hence the participants came with a wide variety of previous experience and qualifications and sometimes with no qualifications at all. Comparisons would therefore be difficult as well as against the philosophy of the programme. The main entry characteristics collected therefore were the age and gender of participants.

There was no significant difference in age between successful participants and those who did not make progress. Although some studies of full-time, undergraduate students (Astin, 1975) have suggested that older students are more likely to drop out than those of traditional entry age (17 – 19 years), this does not appear to be a factor for mature, part-time students on management courses. Metzner and Bean (1987) did find an indirect effect in their study of part-time mature undergraduate students. Age was not directly related to dropout but it was significantly related to Grade Point Average, which was, in turn, a predictor of dropout. Bond (1988), however, in his study of DMS students found no difference in age between those who completed and those who dropped out. The DMS students are the most similar in kind to the NVQ students in this study.

There did appear to be a difference in gender for those completing since 43% of the successful group were female compared with 23% of those who did not make any progress. This contrasts with the findings of Bond (1988) who found no difference in gender between successful students and those who dropped out on DMS courses. Metzner and Bean (1987) also found no direct or indirect relationship between gender and dropout in their study of part-time mature students. Pantages and Creedon (1978) in their review of 35 years of research into attrition, mainly on full-time undergraduate students, concluded that there is strong evidence that gender is not a significant variable in determining persistence or attrition. Nevertheless, they did note that men and women gave different reasons for dropping out and also that it was an important factor in some institutions and not in others. For example, women were more likely to drop out when they were attending institutions with a high ratio

of men to women. Astin (1975) showed that women were more likely to graduate in four years but that more men would persist over subsequent years so that ten-year graduation rates ultimately favoured the men. Thus the factors affecting gender and completion are complex and the issue is worthy of study in its own right. The numbers involved in the current research, however, are too small to draw significant conclusions from the figures but it does suggest an interesting area for further research.

10.2 External influences and completion for NVQ participants

All five factors representing external influences were shown to have a significant effect on completion although individual items within these factors were not all significant. Thus the research emphasises the importance of external influences for part time students. Herrick (1986) concluded that the 'totality' of research on mature students showed the influence of external factors on withdrawal. It is generally recognised that mature, part-time students have a greater range of external pressures on them than full-time, adolescent residential students (Tight, 1987). Also that part-time students experience many competing demands on their time and particularly work pressures (Munn et al, 1992; Metzner and Bean, 1985, Bond, 1988). These findings contrast with studies such as Tinto's (1993), which focussed on full time, residential, undergraduate students. Tinto minimised the importance of external influences although he did, nevertheless, accept that external commitments did have some effect. However other researchers on undergraduate students have found that external commitments were a stronger influence on persistence than Tinto's model suggested (Christie and Dinham, 1991).

A key external influence on NVQ and DMS participants identified by this research is that of workload. Those who made no real progress claimed to have more demanding workloads and to work slightly more hours per week than successful participants. Although this is superficially a logical finding, I am not convinced that it is that simple. As discussed earlier, Kember (1995), Bond (1988) and others have argued that pressure of work is often given as the reason for non-completion because students do not wish to admit to the real reasons. The concepts of attribution theory are important here. Thus a participant's inability to cope with and balance the

pressures of the course with the demands of the job leads him/her to explain their non-completion by 'pressure of work'. It may also cause them to subconsciously inflate the rating representing the demanding nature of their job and the number of hours worked in order to justify their lack of progress. Rotter (1966) developed an instrument to test the extent to which individuals differ in their beliefs about the degree of control that they have. He showed that those with an external locus of control are more likely to blame external factors. This issue is worthy of further research that would assess a participant's workload more systematically and relate this to personal characteristics (including locus of control) and completion. This is discussed more fully in paragraph 10.5.

Flexibility of submission dates for units of the portfolio was also a significant influence in distinguishing between the successful participants and those that did not make any real progress. The overall requirement was that participants needed to complete the programme in five years because that was the period of registration allowed by the NVQ awarding body. Although the expectation was that participants would complete in about two years, it became evident that some people were treating five years as the time allowed. They therefore did not adhere to a regular programme of work for the course. The longer the coursework was left, the more difficult it was to get back into it. Consequently the Business School introduced the requirement to hand in a given number of units per year. Some in-house programmes also required participants to complete in a given timescale. The research shows that reduced flexibility in submission dates for units does increase the chances of completion. This also supports the findings of Birchall and Pollack (1992) who found that a significant freedom of choice on the distance learning MBA programme at Henley Management College was counter-productive to course completion.

Schroder (1989) argued that personal characteristics have more influence in unstructured situations. A fundamental feature of the NVQ programme is that it is much less structured than traditional 'taught' courses such as the DMS. Thus the finding that successful NVQ participants not only scored more highly on the competence of leadership than those who made no effective progress but also scored more highly than participants on the more structured DMS programme is interesting and provides some support for Schroder's argument. Furthermore, there were

significant differences between the successful NVQ participants and the non-completers in two other competencies (Written Communication and Interpersonal Sensitivity) with the successful participants scoring more highly in each competency.

NVQ qualifications are a relatively new development and, as such, have taken time to become established as an acceptable qualification. Indeed there is still considerable differences in view over their role and relationship to 'academic' qualifications such as the DMS as discussed in Chapter 1. The participant's perception of the importance of NVQs in relation to a university award was found to be an important influence on completion. Successful participants viewed their importance more highly than those who did not make significant progress. This finding is consistent with other studies (Metzner and Bean, 1987; Ethington, 1990; Kember, 1995) which all demonstrated that the value of participation in the programme as seen by the students is an important factor in persistence. It is also, of course, an important principle of expectancy theory that the perceived value (or valence) of an outcome is a significant factor in motivation. People are influenced by the expected results of their actions. Motivation is a function of the expectation that their behaviour will lead to a particular outcome and the perceived value for the outcome (Buchanan and Huczynski, 1997). Thus the greater the perceived value of the NVQ award, the greater the motivation.

The participant's perception of the organisation's attitude towards management qualifications in general and NVQs in particular was not a discriminating variable between completers and non-completers for the NVQ participants. Analysis of the responses shows that most respondents perceived that their organisation considered management qualifications and NVQs to be important. Since most of the NVQ participants were on company-based programmes, this finding was, perhaps, to be expected. However, participants do sometimes view courses as being promoted by the training department with less enthusiastic support from the rest of the organisation. There was no evidence of this in the findings of this research.

The attitude and degree of support from the participant's line manager is an important influence on completion. Successful participants felt that they received more support from their line manager than those who did not make progress. This

was demonstrated through their manager taking more positive interest in the programme by discussing their progress and the relationship of the course to their work. The extent to which supervisors at work provided reinforcement and feedback was linked to training effectiveness by Noe (1986). The importance of such support was also identified by Bossons (1988) in her research on distance learning students. She noted that the most commonly reported problem relating to support was with the student's own boss. If the boss was negative towards the training programme, this could have a very destructive effect on the student's motivation. She also noted, however, that it depended on the person's personality as to how well they stood up to comments and criticism. This serves to re-emphasise the importance of the interplay between personal characteristics and external influences and the resulting effects on completion.

There was no significant difference in the second element of employer support, which was the perceived support from the organisation as a whole. Most NVQ participants considered the organisation to be supportive, no doubt partly because they were sponsored on company-based schemes. Thus the employer would be expected to be supportive having set up the programme with the Business School and sponsored the participants on it.

The other forms of support came from outside work. Successful participants felt that they received more support from the course group. The effect of the degree of support from other participants in the course group in influencing completion is significant. Although peer-group influence has been recognised in studies of full-time, residential, undergraduate students (Pantages and Creedon, 1978) and social integration was an important constituent of Tinto's (1993) interactional model, this factor has not figured so significantly in studies of part-time students. It was not initially considered to be a key factor in NVQ programmes at the Business School because the groups only met for portfolio workshops every six weeks. Nevertheless, the interviews with a sample of participants identified the importance of this variable and this was confirmed by the analysis of the questionnaire responses. Further consideration shows that, where participants were from the same company, they often had day-to-day contact and would exchange views on progress and the value of

the programme even though the course groups only met every six weeks. Thus the effect of peer group influence was significant.

The importance of support from home is significant and successful NVQ participants rated this more highly than those who did not complete. Again this was not initially expected but was identified as a factor in the interview programme and confirmed in the analysis of the questionnaires. As the assessment for the NVQ involved the collection of work-based evidence of competence, it was not anticipated that participant's home lives would impinge on the programme. It became apparent, however, that successful participants did put in time outside work in order to complete their portfolios and those who did not complete were either unwilling or unable to do so.

Thus the amount of support that a participant receives both from within work through their line manager and outside work through the course group and from home does have a significant influence on completion. There is, however, an interaction here between the personal competencies of Leadership and Interpersonal Sensitivity and this level of support. As discussed earlier, it may be considered that participants with higher scores in these competencies are more influential themselves in generating and maintaining that support whereas participants with less competency are more easily influenced.

10.3 Comparison between Successful NVQ and DMS participants

It is interesting to note that the research also found differences between the successful NVQ participants and their counterparts on the more traditional DMS course in both personal competencies, initial goal orientation and external influences.

Whilst there was no difference in the overall strength of objectives representing initial goal orientation held between the two groups, NVQ participants did rate the importance of improving job performance more highly than the DMS group. Thus successful NVQ participants perceived the NVQ as more job related.

The research also showed that successful NVQ participants scored more highly on the competency of Leadership than the successful DMS group but lower on Personal Motivation. This suggests that the greater flexibility of the NVQ programme does require participants to be more proactive in influencing others rather than allowing themselves to be influenced by the remainder of the group. This is reinforced by the fact that the successful DMS participants received significantly more support from their course group and from their home life than the successful NVQ participants. However, the opposite was true for support from work and NVQ participants did receive a higher level of support from their line manager. This is perhaps a reflection of the fact that the NVQ was seen as more work related and generally sponsored by the organisation.

10.4 Practical implications of research

The significance of student non-completion of courses has been clearly demonstrated in this research study. With typical attrition rates of 50% for undergraduate courses and similar levels on part-time and distance learning courses, a better understanding of the phenomenon of non-completion with a view to reducing levels of attrition is clearly of value. This is of benefit to students who often suffer feelings of frustration and a sense of failure when leaving a course prematurely. It is of benefit to educational institutions since high levels of non-completion result in a loss of fee income and inefficient use of resources.

This study has proposed a model of influences on part-time NVQ courses in management and tested the model in one academic institution, the Bournemouth University Business School. The research has demonstrated that, in this institution, a combination of personal characteristics and external influences are significantly related to completion.

Easterby-Smith et al. (1991) refer to 'generalisability' as the probability that patterns observed in a sample will also be present in the wider population from which the sample is drawn. As this research was based on 98 course participants at one institution, the generalisability to other institutions is limited. Nevertheless, since

some of the findings are underpinned by other research studies, it is possible that these factors apply to a wider range of institutions. Such extrapolation, however, immediately brings in other variables such as the differing structures of NVQ programmes and other institutional effects such as the amount and nature of tutor support and assessment methods.

Bond's (1988) study on DMS students in the UK showed that 46% of the factors mentioned by students as reasons for dropping out were job related. Hackman and Dysinger (1970) warned that lists of reasons given by students for dropping out should be regarded with scepticism because almost all of the problems reported are shared by large numbers of students who do not withdraw. Hence the significance of this research which seeks to identify why it is that some students react to these problems by dropping out whereas others are able to overcome them and complete successfully.

The findings of this research can be used both to influence the design of NVQ programmes in management to improve completion rates and as a guide to the counselling and support given to participants. It is not suggested that the findings are used to influence selection methods. Although research does suggest that tightening entry requirements to courses in order to filter out students more at risk of dropout will improve completion rates (Martinez, 1997), this would be against the principles of open access which is a key part of the philosophy of the NVQ movement.

Certainly a potential use for an instrument such as the Inventory of Management Competencies (IMC) is for the selection of candidates when applying for enrolment on the programme in the same way that psychometric tests are used for selecting candidates for jobs (Fletcher, 1993; Barrick and Mount, 1994). If the characteristics of successful participants can be identified, then selection of candidates with those characteristics should enable completion rates to improve. However, although the IMC did identify differences between successful NVQ participants and those who did not make any progress, the profile of the successful NVQ participants and the non-completers are not distinct enough for the IMC to be used reliably in this way. Thus further research with larger numbers of students and in different institutions would be valuable to identify whether this finding is replicated in other settings.

However, the findings are valuable in respect of the design of NVQ programmes. Flexibility of submission dates for units was found to be an important factor influencing completion. Too much flexibility increases the dropout rate since many participants are unable to maintain impetus when there are no specific requirements for submission or when there are no penalties for non-submission. This finding has been supported by other studies (Birchall and Pollack, 1992). Thus if course designers provide a clear structure for submission dates or a method for agreeing these so that participants have a definite programme to which to work this is likely to have a positive effect on completion. Although one of the key benefits of NVQ programmes was originally considered to be this flexibility of submission, it is clear that for many people it does not work in practice. A degree of flexibility can of course be maintained by allowing participants to choose the units they work on within the overall structure set.

Since support from other members of the course group showed a significant positive relationship with completion it is important to facilitate positive interactions within the group so as to encourage a positive, supportive atmosphere between group members. Thus particular consideration needs to be given at the start of a new programme to the development of group processes. Early meetings of the group may focus on team building and group development with the tutor paying particular attention to facilitating group processes. This is often done on traditional courses such as the DMS but may be neglected on NVQ programmes that are seen as more individually orientated and typically meet less often. A residential period with appropriate activities to build group interaction and support may be a useful way of starting new programmes.

Participants may also be encouraged to help each other through self-help groups and telephone networking. Unlike courses like the 'taught' DMS where there is usually more regular contact between participants, often weekly, NVQ participants tend to meet less frequently – at six week intervals in the case of the Bournemouth University programme. Thus course designers may improve completion rates by giving attention more actively to the facilitation of mutual support within the group.

However, it is apparent that some participants need more support than others. Hence the use of the Inventory of Management Competencies or similar instrument to help identify those needing more support will be beneficial. For example, those weaker on written communication may be given extra support to help strengthen this competency. Martinez (1997) in a study of retention strategies in Further Education colleges identified the value of initial student assessments in order to ensure the student is placed on the right course and to identify their support needs. He emphasised also the importance of effective teaching interventions and changes to curriculum structures and processes triggered by the outcomes of such assessments in improving retention rates.

Alternatively, other methods of assessment may be introduced to reduce the emphasis on the degree of writing required in the paper-based portfolio method of assessment. There have been a number of projects sponsored by the MCI designed to explore different methods of assessment and research on alternative methods to the paper-based portfolio approach is continuing.

Individual support may also be enhanced by giving due consideration to the selection of participants into workshop groups. Thus by taking particular care, for example, in allocating those scoring lower on Leadership to more supportive groups participants may be less exposed to negative influences that adversely affect their level of persistence.

Such support is not limited to activities within the course group. As it is apparent that support from the line manager is an important influencing factor, effort can be made to encourage the line managers of participants to become more involved with the course programme. This can be done by inviting line managers to induction and other events on the programme so that they can better understand its potential value and the pressures that the participants are experiencing. It can also be achieved by visits to line managers by course tutors to enable more direct briefing and interaction between line managers and course staff.. Indirectly, participants can be encouraged themselves to pay some attention to involving their line manager in their activities.

Whilst some of these activities will undoubtedly require more time from the course team, the benefits in terms of improved retention rates should outweigh the costs.

Finally, the research highlights the importance of effective systems for monitoring and classifying student non-completion. If strategies are to be developed to improve retention rates then accurate data for tracking and following up students does need to be available both within institutions and to allow comparison between institutions. The conclusion from this research is that there are differences between successful NVQ participants and those that do not make any significant progress in both their level of personal competencies and in the external influences upon them. Managers of NVQ programmes can benefit from these findings both when designing course structures and support and in counselling and advising prospective participants.

10.5 Suggestions for further research

As with much research, this study raises further questions as well as answering others. Further research is suggested in a number of areas.

Firstly, it would be valuable to undertake similar research across a number of institutions to explore whether the influences identified as significant in this research are repeated elsewhere. This study has shown that the degree of flexibility in the programme structure is an important influence on completion. Thus research in different institutions with different programme structures and flexibility would provide valuable information on how courses might be designed to optimise the degree of flexibility in relation to completion, taking into account the needs of different students.

As other studies have shown (Bean, 1980 1983; Braxton and Brier, 1989) research in different institutions would introduce additional influencing variables. Factors such as course delivery and institutional processes differ and these do affect completion rates. However, an exploration of such institutional influences would also be of considerable value.

As discussed earlier, the research shows that the issue of workload is more complex than it appears on the surface. Students often attribute high workload as the reason for non-completion when in fact this may mask other reasons. It may be that the student does not wish to reveal the true reason for not completing or is not aware of it. It may also be that personal competencies mean that the student is not capable of managing a given workload in addition to meeting the course requirements whereas another student with different competencies will cope quite comfortably. A research programme designed to assess workload more objectively and compare this with competencies and completion may reveal different results.

The concept of locus of control also offers significant opportunities for further research. It has been shown in other studies that those with an internal locus of control tend to perform better in less structured situations than do those with an external locus of control. A key feature of many NVQ programmes is the degree of flexibility in their structure. Thus it would be interesting to explore the relationship between locus of control and completion and also in relation to course flexibility. As O'Brien (1984) showed, however, a simple analysis of the correlation between locus of control and completion would not be sufficient. Studies have shown that other variables will influence the relationship and that differences in ability, for example, need to be controlled for. Lied and Pritchard (1976) in a study of 146 Airforce technical trainees reported that the relationship between locus of control and performance became insignificant when ability was controlled statistically. Spector (1982) suggested that locus of control might be a useful variable for employee selection between more or less structured jobs. Similarly, if locus of control were found to be related to completion and course flexibility, then this could be used as a further means of counselling prospective students to the right programme for them.

Whilst the Inventory of Management Competences did identify differences between the successful NVQ participants and those that did not make any real progress, it was only in three of the sixteen competencies in the model. It would therefore be interesting to conduct further studies on completion using competency models with a smaller number of competences such as the twelve Supra-competences in the Job Competences Survey (Dulewicz, 1992) or the eleven High-Performing Competencies in Schroder's model (Schroder, 1989) to see if similar competencies emerge.

The results of previous research studies testing the relationship between personality variables and work performance have been variable. However, Zabel did find a significant relationship between personality factors using the Myers Briggs Type Indicator and completion in a study of students at the Texas Tech University. This suggests that further research using psychometric instruments such as the MBTI or 16PF is still a useful line of enquiry. The finding from this study that the factor of 'support from the course group' was significantly related to completion suggests that a study of Belbin's team roles for each participant may also be of interest.

An alternative line of enquiry would be to explore the relationship of individual competencies with completion. This research showed that the competency of leadership, for example, was significantly related to completion for NVQ participants at one institution. It would therefore be interesting to explore this finding further by using other instruments to assess leadership qualities and comparing these with completion.

Finally, a further possible line of research would be in the impact of NVQ programmes on work performance as opposed to traditional courses such as the DMS. A significant factor in the successful NVQ group was the importance of the NVQ programme in improving performance at work. What is the actual effect of the programme? How does this compare with traditional taught programmes? Positive results from such research would also enhance the perception of the value of NVQ courses which, as this research shows, would also improve completion levels

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APPENDICES

APPENDIX 1: The MCI Management Standards

Management 1 – NVQ Level 4

Key Purpose: To achieve the organisation's objectives and continuously improve its performance.

Key role	Unit of Competence	Element of Competence
Manage Operations	1 Maintain and improve service and product operations	1.1 Maintain operations to meet quality standards
		1.2 Create and maintain the conditions necessary for productive work
	2 Contribute to the implementation of change in services, products and systems	2.1 Contribute to the evaluation of proposed changes to services, products and systems
		2.2 Implement and evaluate changes to services, products and systems
Manage Finance	3 Recommend, monitor and control the use of resources	3.1 Make recommendations for expenditure
		3.2 Monitor and control the use of resources
Manage People	4 Contribute to the recruitment and selection of personnel	4.1 Define future personnel requirements
		4.2 Contribute to the assessment and selection of candidates against team and organisational requirements
	5 Develop teams, individuals and self to enhance performance	5.1 Develop and improve teams through planning and activities
		5.2 Identify, review and improve development activities for individuals
		5.3 Develop oneself within the job role
	6 Plan, allocate and evaluate work carried out by teams, individuals and self	6.1 Set and update work objectives for teams and individuals
		6.2 Plan activities and determine work methods to achieve objectives
		6.3 Allocate work and evaluate teams, individuals and self against objectives
		6.4 Provide feedback to teams and individuals on their performance
	7 Create, maintain and enhance effective working relationships	7.1 Establish and maintain the trust and support of one's subordinates
		7.2 Establish and maintain the trust and support of one's immediate manager
		7.3 Establish and maintain relationships with colleagues
		7.4 Identify and minimise interpersonal conflict
		7.5 Implement disciplinary and grievance procedures
		7.6 Counsel staff
Manage Information	8 Seek, evaluate and organise information for action	8.1 Obtain and evaluate information to aid decision making
		8.2 Record and store information
	9 Exchange information to solve problems and make decisions	9.1 Lead meetings and group discussions to solve problems and make decisions
		9.2 Contribute to discussions to solve problems and make decisions
		9.3 Advise and inform others

Management 2 – NVQ Level 5

Key Purpose: To achieve the organisation's objectives and continuously improve its performance.

Key Role	Unit of Competence	Element of Competence
Manage Operations	1 Initiate and implement change and improvement in services, products and systems	1.1 Identify opportunities for improvement in services, products and systems
		1.2 Evaluate proposed changes for benefits and disadvantages
		1.3 Negotiate and agree the introduction of change
		1.4 Implement and evaluate changes to services, products and systems
		1.5 Introduce, develop and evaluate quality assurance systems
	2 Monitor, maintain and improve service and product delivery	2.1 Establish and maintain the supply of resources into the organisation/department
		2.2 Establish and agree customer requirements
		2.3 Maintain and improve operations against quality and functional specifications
		2.4 Create and maintain the necessary conditions for productive work
Manage Finance	3 Monitor and control the use of resources	3.1 Control costs and enhance value
		3.2 Monitor and control activities against budgets
	4 Secure effective resource allocation for activities and projects	4.1 Justify proposals for expenditure on projects
		4.2 Negotiate and agree budgets
Manage People	5 Recruit and select personnel	5.1 Define future personnel requirements
		5.2 Determine specifications to secure quality people
		5.3 Assess and select candidates against team and organisational requirements
	6 Develop teams, individuals and self to enhance performance	6.1 Develop and improve teams through planning and activities
		6.2 Identify, review and improve development activities for individuals
		6.3 Develop oneself within the job role
		6.4 Evaluate and improve the development processes used
	7 Plan, allocate and evaluate work carried out by teams, individuals and self	7.1 Set and update work objectives for teams and individuals
		7.2 Plan activities and determine work methods to achieve objectives
		7.3 Allocate work and evaluate teams, individuals and self against objectives
		7.4 Provide feedback to teams and individuals on their performance
	8 Create, maintain and enhance effective working relationships	8.1 Establish and maintain the trust and support of one's subordinates
		8.2 Establish and maintain the trust and support of one's immediate manager
		8.3 Establish and maintain relationships with colleagues
		8.4 Identify and minimise interpersonal conflict
		8.5 Implement disciplinary and grievance procedures
		8.6 Counsel staff
Manage Information	9 Seek, evaluate and organise information for action	9.1 Obtain and evaluate information to aid decision making
		9.2 Forecast trends and developments which affect objectives
		9.3 Record and store information
	10 Exchange information to solve problems and make decisions	10.1 Lead meetings and group discussions to solve problems and make decisions
		10.2 Contribute to discussions to solve problems and make decisions
		10.3 Advise and inform others

APPENDIX 2: The MCI Personal Competence Model

Clusters of personal competence	Dimensions of personal competence
1. Planning to optimise the achievement of results	1.1 Showing concern for excellence 1.2 Setting and prioritising objectives 1.3 Monitoring and responding to actual against planned activities
2. Managing others to optimise results	2.1 Showing sensitivity to the needs of others 2.2 Relating to others 2.3 Obtaining the commitment of others 2.4 Presenting oneself positively to others
3. Managing oneself to optimise results	3.1 Showing self confidence and personal drive 3.2 Managing personal emotions and stress 3.3 Managing personal learning and development
4. Using intellect to optimise results	4.1 Collecting and organising information 4.2 Identifying and applying concepts 4.3 Taking decisions

APPENDIX 3: A Model of Job Competences (Dulewicz 1992)

The model of competencies used in the Job Competences Survey

Part 1: Information Handling

1. Information collection
2. Problem analysis
3. Numerical interpretation
4. Judgement
5. Creativity
6. Risk taking
7. Decisiveness
8. Business sense
9. Helicopter
10. Organisational awareness
11. Extra-organisational awareness

Part II: Communication

12. Reading
13. Written communication
14. Perceptive listening
15. Oral expression
16. Oral presentation

Part III: Management

17. Planning
18. Organising
19. Delegation
20. Appraisal
21. Development of subordinates
22. Self-management

Part IV: Inter-personal

23. Impact
24. Persuasiveness
25. Sensitivity
26. Flexibility
27. Ascendancy
28. Motivating others
29. Negotiating
30. Leadership

Part V: Personality

31. Energy
32. Achievement-orientation
33. Initiative
34. Tolerance for stress
35. Adaptability
36. Independence
37. Integrity
38. Resilience
39. Tenacity
40. Detail Consciousness

APPENDIX 4: The SHL Model of Management Competencies

Area	Competency	Definition
Managerial Qualities	Leadership	Motivates and empowers others in order to reach organisational goals.
	Planning & Organising	Organises and schedules events, activities and resources. Sets up and monitors timescales and plans.
	Quality Orientation	Shows awareness of goals and standards. Follows through to ensure that quality and productivity standards are met.
	Persuasiveness	Influences, convinces or impresses others in a way that results in acceptance, agreement or behaviour change.
Professional Qualities	Specialist Knowledge	Understands technical or professional aspects of work and continually maintains technical knowledge.
	Problem Solving & Analysis	Analyses issues and breaks them down into their component parts. Makes systematic and rational judgements based on relevant information.
	Oral Communication	Speaks clearly, fluently and in a compelling manner to both individuals and groups.
	Written Communication	Writes in a clear and concise manner, using appropriate grammar, style and language for the reader.
Entrepreneurial Qualities	Commercial Awareness	Understands and applies commercial and financial principles. Views issues in terms of costs, profits, markets and added value.
	Creativity and Innovation	Creates new and imaginative approaches to work-related issues. Identifies fresh approaches and shows a willingness to question traditional assumptions.
	Action Orientation	Demonstrates a readiness to make decisions, take the initiative and originate action.
	Strategic	Demonstrates a broad-based view of issues, events and activities and a perception of their longer term impact or wider implications.
Personal Qualities	Interpersonal Sensitivity	Interacts with others in a sensitive and effective way. Respects and works well with others.
	Flexibility	Successfully adapts to changing demands and conditions.
	Resilience	Maintains effective work behaviour in the face of setbacks or pressure. Remains calm, stable and in control of themselves.
	Personal Motivation	Commits self to work hard towards goals. Shows enthusiasm and career commitment.

APPENDIX 5: Example of a rating scale for a behavioural competency

Behavioural Descriptions for Competency of 'Information Seeking'
(Spencer and Spencer, 1993, p 35)

Level	Behavioural Description
0	*None.* Does not seek additional information about a situation, other than what has been given.
1	*Asks Questions.* Asks direct questions of immediately available people (or people who are directly involved in the situation even if not physically present), consults available resources. Note that even in crisis situations, superior performers take a few moments to gather all the immediately available information before taking action.
2	*Personally Investigates.* Gets out personally to see the plant, factory, ship, customer's installation, loan applicant's business, classroom, students' failing papers or other problem. Questions those closest to the problem when others might ignore these people.
3	*Digs Deeper.* Asks a series of probing questions to get at the root of a situation or a problem, below the surface presentation.
4	*Calls or Contacts Others.* Calls on others, who are not personally involved, to get their perspective, background information, experience (this is often, but not necessarily, a form of using previously established relationships).
5.	*Does Research.* Makes a systematic effort over a limited period of time to obtain needed data or feedback; or does formal research through newspapers, magazines, or other resources. (If the information is existing technical data or knowledge or the systematic effort involves taking courses, score for Technical Expertise C instead).
6	*Uses Own Ongoing Systems.* Has personally established ongoing systems or habits for various kinds of information gathering (may include 'management by walking around', regular informal meetings etc., if these are used specifically to gather information).
7	*Involves Others.* Involves others who would not normally be involved and gets them to seek out information. (Do not score for delegating research or information-seeking to subordinates; this point is for involving people who would normally not be involved.)

APPENDIX 6: Example of questions in the Inventory of Management Competences

Working one block at a time:

(1) Give a rating for each statement using the scale:

1. **Hardly ever**
2. **Seldom**
3. **Sometimes**
4. **Often**
5. **Nearly always**

(2) Indicate which **one** of the four statements is **most** true and which **one** of the four statements is **least** true.

1.
- **A** Supports others
- **B** Writes in a fluent manner
- **C** Reacts positively to change
- **D** Identifies opportunities to reduce costs

2.
- **A** Is innovative
- **B** Encourages a sense of standards in others
- **C** Shows drive and determination
- **D** Responds to feedback from an audience

3.
- **A** Copes with disappointments
- **B** Demonstrates specialist knowledge
- **C** Defines team goals
- **D** Recognises pertinent information

4.
- **A** Articulates the key points of an argument
- **B** Is realistic about time scales
- **C** Shows an appreciation of corporate aims
- **D** Makes quick decisions under pressure

5.
- **A** Takes a broad view of own work
- **B** Fits in with the team
- **C** Comes up with alternatives
- **D** Stays calm under pressure

Please go on to next page

APPENDIX 7: Cattell's 16 Personality Factors

Primary Factors

A Reserved – Outgoing

B Less Intelligent - More Intelligent

C Emotional – Stable

E Humble - Assertive

F Sober - Happy-go-lucky

G Expedient – Conscientious

H Shy – Venturesome

I Toughminded – Tenderminded

L Trusting - Suspicious

M Practical - Imaginative

N Forthright - Shrewd

O Placid – Apprehensive

Q1 Conservative – Experimental

Q2 Group-tied – Self-sufficient

Q3 Casual - Controlled

Q4 Relaxed - Tense

Secondary Factors

1 Introversion – Extraversion

2 Adjustment – Anxiety

3 Emotionality - Tough Poise

4 Subduedness - Independence

APPENDIX 8: The External Influences Questionnaire Version 1

Management Qualifications Research Programme - Background Questionnaire

Section 1 *Biographical Data*

1. Your name: ..... 2. Date of birth: .....

3. Course attended at the Business School (please tick)

- ☐ Certificate in Management (with NVQ 4)
- ☐ Diploma in Management Studies (with NVQ 5)
- ☐ Diploma in Management Studies (part-time or day/evening)

Date of first registration: (month/year) .....

4. Name of your employing organisation: .....

5. What is your current job title? .....

6. How many years have you been in this job? .....

7. If different, what was your job title at start of course? .....

8. On average, how many staff were you directly responsible for during the first 6 months of the programme: .....

Section 2 *Employer Support*

9. Did your employer pay the full tuition fee for the course?

- ☐ Yes
- ☐ No

10. If no, what percentage did you pay? .....%

11. Did your employer contribute to the cost of books needed for the course (other than open learning material on NVQ programmes):

- ☐ Yes
- ☐ No

12. Did your employer give you time off work to study for any of the following (please tick more than one if appropriate). Do not tick if you had to make up the time.

- ☐ Regular lectures at the Business School
- ☐ In-house courses run by your organisation
- ☐ Other external courses
- ☐ Time off for portfolio development
- ☐ Time off for study

13. Was your immediate line manager supportive to your attendance on your management course:

☐ supportive ☐ against the course
☐ neutral ☐ don't know

14. Was the organisation generally:

☐ supportive ☐ against the course
☐ neutral ☐ don't know

Section 3 *Work Load*

15. How would you rate your work load during your registration for the programme:

☐ undemanding ☐ not very demanding ☐ average amount of work ☐ very demanding ☐ extremely demanding

16. What was the typical number of hours worked per week in your job (excluding study time) during your course? .....

Section 4 *Importance of Management Qualifications*

17. What was your principal objective when you enrolled for your management course?

☐ to achieve a qualification in management
☐ to improve job performance
☐ to improve chances of career progression

other (please state) .....

18. How important was it to you to achieve a qualification in management?

☐ no importance ☐ some importance ☐ important ☐ very important ☐ extremely important

19. Are you aware of NVQs in management?

☐ Yes ☐ No (If 'No', go to question 23)

20. How would you rate the current importance of an NVQ award in management in relation to a University Certificate or Diploma?

☐ NVQ more important than University award
☐ NVQ less important than University award
☐ Both of equal importance

21. How would you rate the future importance of NVQs in management?

☐ NVQ award will become more important than now
☐ NVQ award will become less important than now

22. How does your organisation rate the importance of NVQs in management?

☐ no importance ☐ some importance ☐ important ☐ very important ☐ extremely important

23. How does you organisation rate the importance of management qualifications?

☐ no importance ☐ some importance ☐ important ☐ very important ☐ extremely important

24. If you did not complete your course, what was your main reason for withdrawing?

.....

.....

Thank you for your time in completing this questionnaire Please return in the envelope provided to:

Eric Hooper Head of Corporate Programmes The Business School
Bournemouth University Bournemouth House 17 Christchurch Road Bournemouth BH1 3LG Tel: 01202 524111

APPENDIX 9: The External Influences Questionnaire Version 2

Management Qualifications Research Programme - Background Questionnaire

Section 1 *Biographical Data*

1. Your name: ..... 2. Date of birth: .....

3. Course attended at the Business School (please tick)

- ☐ Certificate in Management (with NVQ 4)
- ☐ Diploma in Management Studies (with NVQ 5)
- ☐ Diploma in Management Studies (part-time or day/evening)
- ☐ Date of first registration: (month/year) .....
- ☐ HSSM Certificate (with NVQ 4)
- ☐ HSSM Diploma (with NVQ 5)

4. Who was your employer at start of course? .....

5. If you had several employers during your course, please list them in date order and give approximate amount of time you were employed by each:

.....

.....

.....

6. What is your current job title? .....

7. How many years have you been in this job? .....

8. If different, what was your job title at start of course? .....

Section 2 *Support for Programme*

9. Who initially proposed that you enrol for the above course?

☐ Yourself ☐ Your direct Manager ☐ Your Training Manager ☐ Other

10. What percentage of the course fee did your employer pay? .....

11. Did your employer contribute to the cost of books needed for the course (other than open learning material on NVQ programmes):

☐ yes ☐ no

12. Did your employer give you time off work to study for any of the following (please tick more than one if appropriate). Do not tick if you had to make up the time.

- ☐ Regular lectures at the Business School
- ☐ In-house courses run by your organisation
- ☐ Other external courses
- ☐ Time off for portfolio development
- ☐ Time off for study

Please indicate your level of agreement with the following statements by placing a tick in one box only:

13. My immediate line manager was supportive of my attendance on the programme:

☐ strongly disagree ☐ disagree ☐ neither agree nor disagree ☐ agree ☐ strongly agree

14. My organisation was supportive of my attendance on the programme:

☐ strongly disagree ☐ disagree ☐ neither agree nor disagree ☐ agree ☐ strongly agree

15. What influence did your course group have on your progress through the programme?

☐ significant discouragement to progress ☐ some discouragement to progress ☐ neutral ☐ some encouragement to progress ☐ significant encouragement to progress

16. What influence did your personal or home life have on your progress through the programme?

☐ significant discouragement to progress ☐ some discouragement to progress ☐ neutral ☐ some encouragement to progress ☐ significant encouragement to progress

Section 3 *Work Load*

17. How would you rate your normal work load in your job over the duration of the course:

☐ undemanding ☐ not very demanding ☐ average amount of work ☐ very demanding extremely demanding

18. What was the average total number of hours worked per week in your job during your course (excluding study time)?

.....

Section 4 *Importance of Management Qualifications*

19. Please rate the importance to you of the following objectives when you enrolled for the programme:

	Irrelevant	of little importance	Important	very important	essential
a) to achieve a qualification	☐	☐	☐	☐	☐
b) to improve job performance	☐	☐	☐	☐	☐
c) to improve chances of career progression	☐	☐	☐	☐	☐

d) other (please state) .....

20. Are you aware of NVQs in management?

☐ yes ☐ no

[If 'no' go to Question 22 (b)]

21. How would you rate the importance of an NVQ award in management in relation to a University Certificate or Diploma?

a) NVQ currently more important than University award:

☐ strongly disagree ☐ disagree ☐ neither agree nor disagree ☐ agree ☐ strongly agree

b) NVQ will be more important than University award in future:

☐ strongly disagree ☐ disagree ☐ neither agree nor disagree ☐ agree ☐ strongly agree

22. How does your organisation rate the importance of the following:

a) NVQs in management:

☐ Irrelevant ☐ of little importance ☐ important ☐ very important ☐ essential

b) Management qualifications generally:

☐ Irrelevant ☐ of little importance ☐ important ☐ very important ☐ essential

23. If you did not complete your course, what was your main reason for withdrawing? (continue on separate sheet if necessary)

.....

Thank you for your time in completing this questionnaire. Please return in the envelope provided to:

Eric Hooper, Head of Human Resource Management, The Business School,
Bournemouth University, Bournemouth House, 17 Christchurch Road, Bournemouth BH1 3LG Tel: 01202 524111

APPENDIX 10: The Learning Styles Questionnaire

LEARNING STYLES QUESTIONNAIRE

revised 1986

This questionnaire is designed to find out your preferred learning style(s). Over the years you have probably developed learning 'habits' that help you benefit more from some experiences than from others. Since you are probably unaware of this, this questionnaire will help you pinpoint your learning preferences so that you are in a better position to select learning experiences that suit your style.

There is no time limit to this questionnaire. It will probably take you 10-15 minutes. The accuracy of the results depends on how honest you can be. There are no right or wrong answers. If you agree more than you disagree with a statement put a tick by it (✓). If you disagree more than you agree put a cross by it (x). Be sure to mark each item with either a tick or cross.

☐ 1. I have strong beliefs about what is right and wrong, good and bad.

☐ 2. I often act without considering the possible consequences.

☐ 3. I tend to solve problems using a step-by-step approach.

☐ 4. I believe that formal procedures and policies restrict people.

☐ 5. I have a reputation for saying what I think, simply and directly.

☐ 6. I often find that actions based on feelings are as sound as those based on careful thought and analysis.

☐ 7. I like the sort of work where I have time for thorough preparation and implementation.

☐ 8. I regularly question people about their basic assumptions.

☐ 9. What matters most is whether something works in practice.

☐ 10. I actively seek out new experiences.

☐ 11. When I hear about a new idea or approach I immediately start working out how to apply it in practice.

☐ 12. I am keen on self discipline such as watching my diet, taking regular exercise, sticking to a fixed routine, etc.

☐ 13. I take pride in doing a thorough job.

☐ 14. I get on best with logical, analytical people and less well with spontaneous, 'irrational' people.

☐ 15. I take care over the interpretation of data available to me and avoid jumping to conclusions.

☐ 16. I like to reach a decision carefully after weighing up many alternatives.

☐ 17. I'm attracted more to novel, unusual ideas than to practical ones.

☐ 18. I don't like disorganised things and prefer to fit things into a coherent pattern.

☐ 19. I accept and stick to laid down procedures and policies so long as I regard them as an efficient way of getting the job done.

☐ 20. I like to relate my actions to a general principle.

☐ 21. In discussions I like to get straight to the point.

☐ 22. I tend to have distant, rather formal relationships with people at work.

☐ 23. I thrive on the challenge of tackling something new and different.

☐ 24. I enjoy fun-loving, spontaneous people.

☐ 25. I pay meticulous attention to detail before coming to a conclusion.

☐ 26. I find it difficult to produce ideas on impulse.

☐ 27. I believe in coming to the point immediately.

☐ 28. I am careful not to jump to conclusions too quickly.

☐ 29. I prefer to have as many sources of information as possible - the more data to think over the better.

☐ 30. Flippant people who don't take things seriously enough usually irritate me.

☐ 31. I listen to other people's points of view before putting my own forward.

☐ 32. I tend to be open about how I'm feeling.

☐ 33. In discussions I enjoy watching the manoeuvrings of the other participants.

☐ 34. I prefer to respond to events on a spontaneous, flexible basis rather than plan things out in advance.

☐ 35. I tend to be attracted to techniques such as network analysis, flow charts, branching programmes, contingency planning, etc.

☐ 36. It worries me if I have to rush out a piece of work to meet a tight deadline.

☐ 37. I tend to judge people's ideas on their practical merits.

☐ 38. Quiet, thoughtful people tend to make me feel uneasy.

☐ 39. I often get irritated by people who want to rush things.

☐ 40. It is more important to enjoy the present moment than to think about the past or future.

☐ 41. I think that decisions based on a thorough analysis of all the information are sounder than those based on intuition.

☐ 42. I tend to be a perfectionist.

☐ 43. In discussions I usually produce lots of spontaneous ideas.

☐ 44. In meetings I put forward practical, realistic ideas.

☐ 45. More often than not, rules are there to be broken.

☐ 46. I prefer to stand back from a situation and consider all the perspectives.

☐ 47. I can often see inconsistencies and weaknesses in other people's arguments.

☐ 48. On balance I talk more than I listen.

☐ 49. I can often see better, more practical ways to get things done.

☐ 50. I think written reports should be short and to the point.

☐ 51. I believe that rational, logical thinking should win the day.

☐ 52. I tend to discuss specific things with people rather than engaging in social discussion.

☐ 53. I like people who approach things realistically rather than theoretically.

☐ 54. In discussions I get impatient with irrelevancies and digressions.

☐ 55. If I have a report to write I tend to produce lots of drafts before settling on the final version.

☐ 56. I am keen to try things out to see if they work in practice.

☐ 57. I am keen to reach answers via a logical approach.

☐ 58. I enjoy being the one that talks a lot.

☐ 59. In discussions I often find I am the realist, keeping people to the point and avoiding wild speculations.

☐ 60. I like to ponder many alternatives before making up my mind.

☐ 61. In discussions with people I often find I am the most dispassionate and objective.

☐ 62. In discussions I'm more likely to adopt a 'low profile' than to take the lead and do most of the talking.

☐ 63. I like to be able to relate current actions to a longer term bigger picture.

☐ 64. When things go wrong I am happy to shrug it off and 'put it down to experience'.

☐ 65. I tend to reject wild, spontaneous ideas as being impractical.

☐ 66. It's best to think carefully before taking action.

☐ 67. On balance I do the listening rather than the talking.

☐ 68. I tend to be tough on people who find it difficult to adopt a logical approach.

☐ 69. Most times I believe the end justifies the means.

☐ 70. I don't mind hurting people's feelings so long as the job gets done.

☐ 71. I find the formality of having specific objectives and plans stifling.

☐ 72. I'm usually one of the people who puts life into a party.

☐ 73. I do whatever is expedient to get the job done.

☐ 74. I quickly get bored with methodical, detailed work.

☐ 75. I am keen on exploring the basic assumptions, principles and theories underpinning things and events.

☐ 76. I'm always interested to find out what people think.

☐ 77. I like meetings to be run on methodical lines, sticking to laid down agenda, etc.

☐ 78. I steer clear of subjective or ambiguous topics.

☐ 79. I enjoy the drama and excitement of a crisis situation.

☐ 80. People often find me insensitive to their feelings.

LEARNING STYLES QUESTIONNAIRE – SCORING

You score one point for each item you ticked(✓). There are no points for items you crossed(X).

Simply indicate on the lists below which items were ticked.

2	7	1	5
4	13	3	9
6	15	8	11
10	16	12	19
17	25	14	21
23	28	18	27
24	29	20	35
32	31	22	37
34	33	26	44
38	36	30	49
40	39	42	50
43	41	47	53
45	46	51	54
48	52	57	56
58	55	61	59
64	60	63	65
71	62	68	69
72	66	75	70
74	67	77	73
79	76	78	80
_____	_____	_____	_____
Totals			
_____	_____	_____	_____
Activist	*Reflector*	*Theorist*	*Pragmatist*

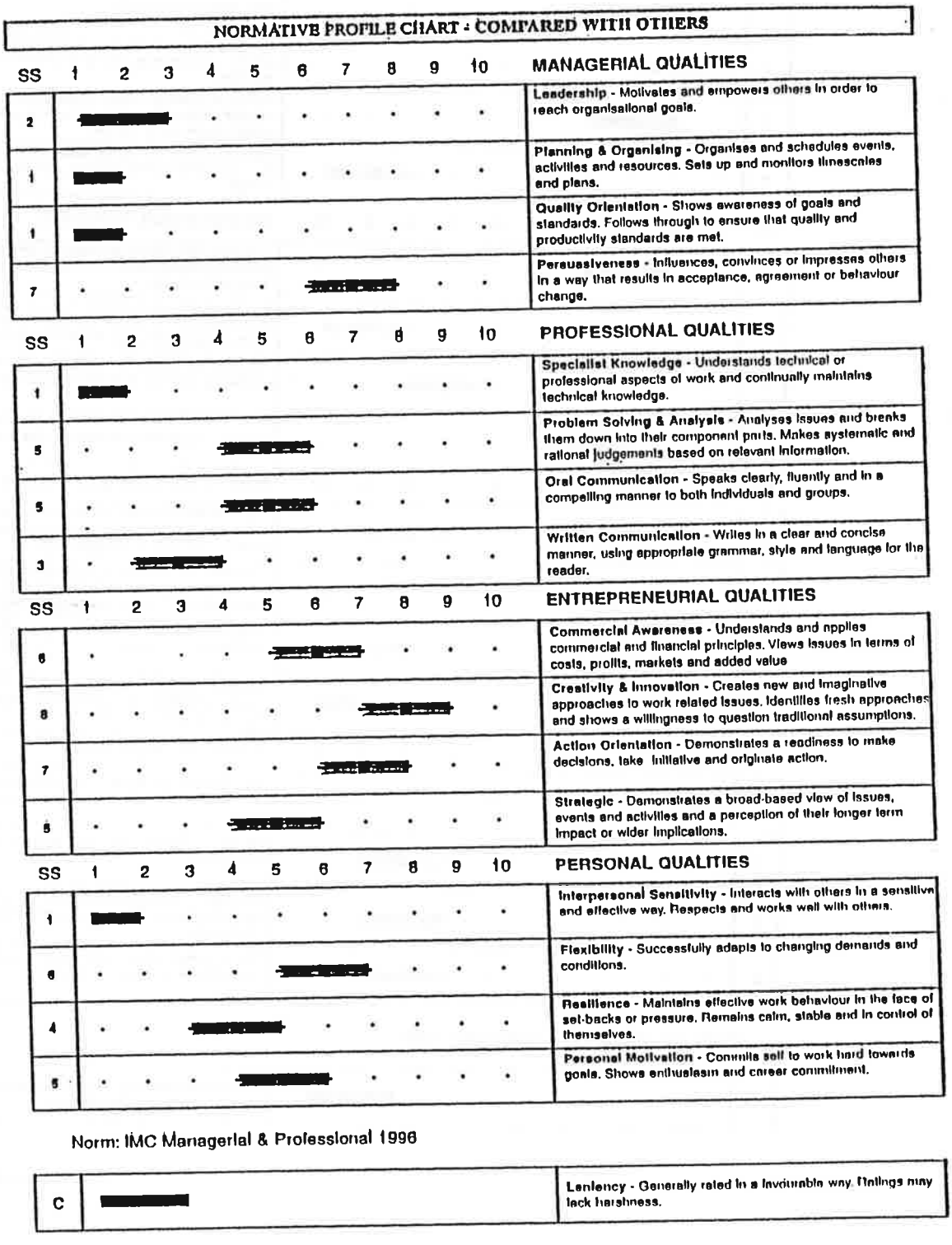
Ring your scores on this chart and join up.

Activist	Reflector	Theorist	Pragmatist	
20	20	20	20	Very strong preference
19				
18		19	19	
17	19	18		
16			18	
15		17		
14				
13	18	16	17	
12	17	15	16	Strong preference
	16			
11	15	14	15	
10	14	13	14	Moderate preference
9	13	12	13	
8				
7	12	11	12	
6	11	10	11	Low preference
5	10	9	10	
4	9	8	9	
3	8	7	8	Very low preference
	7	6	7	
	6	5	6	
2	5	4	5	
	4		4	
	3	3	3	
1	2	2	2	
	1	1	1	
0	0	0	0	

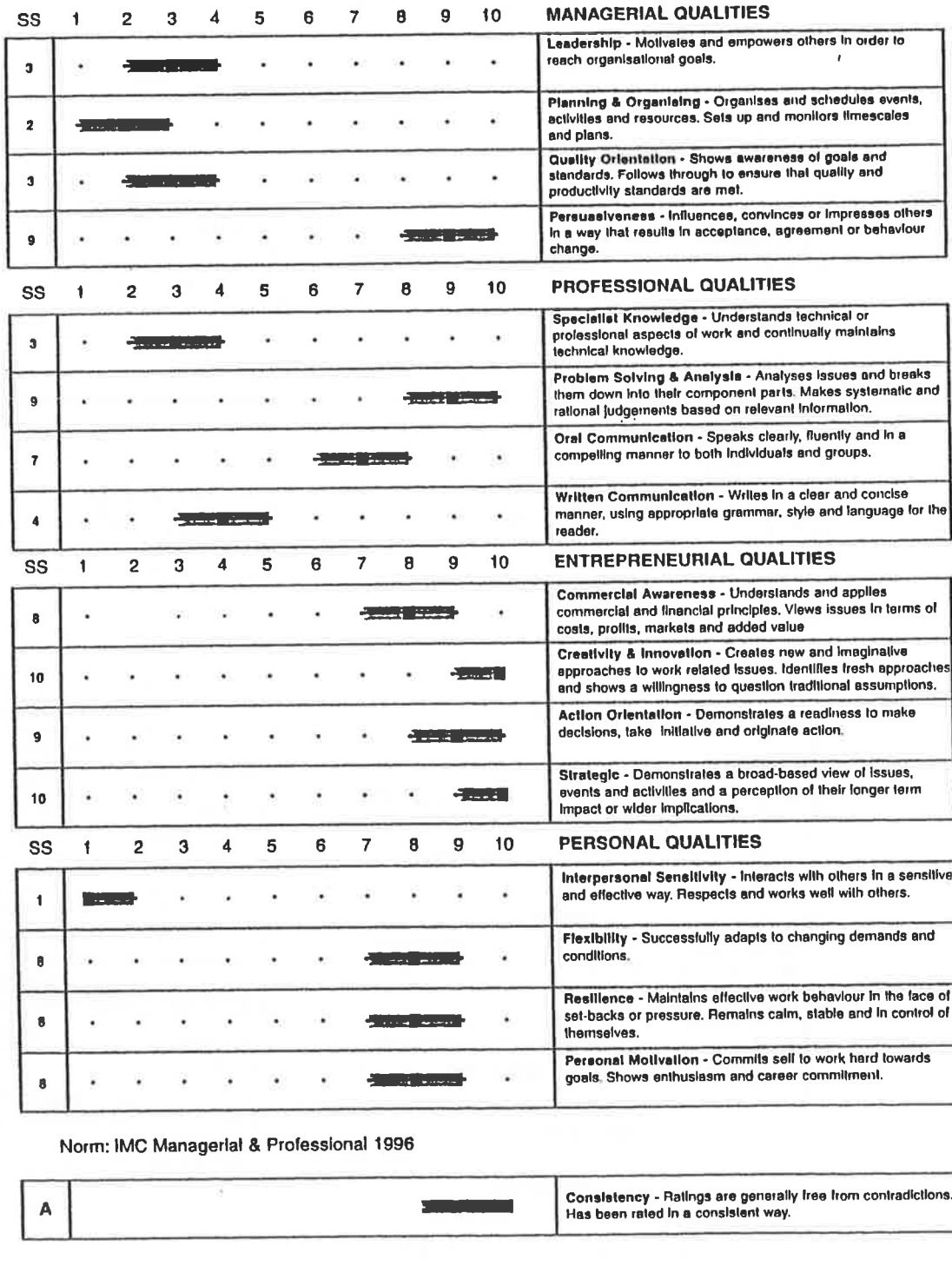
Honey and Mumford 1992

APPENDIX 11: Sample profiles from the Inventory of Management Competencies

Mr Ian Test 28-Aug-96 Inventory of Management Competencies.



IPSATIVE PROFILE CHART - COMPARED WITH OTHERS



Norm: IMC Managerial & Professional 1996

APPENDIX 12: Question Format for Interviews

Interview Plan: Groups 1 and 3 – Successful NVQ and DMS participants

Before interview, check operation of tape recorder and start tape with name of interviewee and date of interview. Have 2 tapes and spare batteries.

Introduction

1 Coming together, greeting, establish rapport, (general questions)
Introduce self if not known to interviewee
Thank for giving time to complete questionnaires and talk to me

2 Explain purpose of research
- for my doctorate
- to enable Business School to continue to improve programmes to meet participant needs

3 Create the right climate - put at ease
confidential
open

4 Ask permission to tape record interview
- enables me to focus on the discussion
- ensures I don't miss anything or neglect anything that I may not think is important at the time but may subsequently emerge as very relevant

5 Set up tape recorder, switch on recorder and microphone, do sound check and check watch to anticipate tape turnover time.

The Interview Part A The Process

6 First of all let's focus on the Background Questionnaire.

Did you have any difficulties in filling this in?
If yes, what were these?
Did you have any objections to answering any of the questions?

7 Go through each of the sections, stimulate further discussion on each and explore reactions to questions.
- comment on overall impression of each section eg "you appear to have had good support from your employer during the course?" or "you seem to have had a very heavy workload?" Probe for further comments.

- any difficulties in answering questions?
- any difficulty in providing the information asked for?
- any ambiguities?

Check particularly any questions not answered by interviewee on questionnaire.
Who initiated your attendance on the programme?

8 Within the context of the questionnaire, did you feel that there were any questions left out?

9 Now perhaps we could turn to the Learning Styles Questionnaire (LSQ).
- any difficulties in answering?

10 And now the Inventory of Management Competencies (IMC)
- any difficulties?

11 Did you have any problems overall with what you were being asked to do? Any difficulty getting your manager to fill in the IMC?

12 Do you have any ideas or suggestions on how the process might be improved?

Part B Influences on Progress in Programme

13 What helped your progress through the programme?

14 What hindered your progress through the programme?

15 Did you ever feel like giving up?
- at what stage?
- Why?
- What kept you going?

16 What was it that made you finish?
- Do you feel that any particular personal qualities are needed to complete the programme? If so, what are they?
- Which is more important - personal qualities or external factors (eg organisational support, structure of programme, tight deadlines for submission of assessed work etc.)
- Show Inventory of Management Competencies – Do you consider that any of these competencies are relevant?
- What about the group itself?

Explore, probe and discuss. Ask for examples of when interviewee showed mentioned qualities at work, eg determination

17 How big a gap was there between any previous courses and starting this programme?

18 At end, switch off tape recorder and thank interviewee.
What happens next?

Interview Plan: Group 2 – NVQ participants who failed to complete

Before interview, check operation of tape' recorder and start tape with name of interviewee and date of interview. Have 2 tapes and spare batteries.

Introduction

1 Coming together, greeting, establish rapport, (general questions)
Introduce self if not known to interviewee
Thank for giving time to complete questionnaires and talk to me

2 Explain purpose of research
- for my doctorate
- to enable Business School to continue to improve programmes to meet participant needs

3 Create the right climate - put at ease
confidential
open

4 Ask permission to tape record interview
- enables me to focus on the discussion
- ensures I don't miss anything or neglect anything that I may not think is important at the time but may subsequently emerge as very relevant

5 Set up tape recorder, switch on recorder and microphone, do sound check and check watch to anticipate tape turnover time.

The Interview Part A The Process

6 First of all let's focus on the Background Questionnaire.

Did you have any difficulties in filling this in?
If yes, what were these?
Did you have any objections to answering any of the questions?

7 Go through each of the sections, stimulate further discussion on each and explore reactions to questions.
- comment on overall impression of each section eg "you appear to have had good support from your employer during the course?" or "you seem to have had a very heavy workload?" Probe for further comments.

- any difficulties in answering questions?
- any difficulty in providing the information asked for?
- any ambiguities?

Check particularly any questions not answered by interviewee on questionnaire.
Who initiated your attendance on the programme?

8 Within the context of the questionnaire, did you feel that there were any questions left out?

9 Now perhaps we could turn to the Learning Styles Questionnaire (LSQ).
- any difficulties in answering?

10 And now the Inventory of Management Competencies (IMC)
- any difficulties?

11 Did you have any problems overall with what you were being asked to do? Any difficulty getting your manager to fill in the IMC?

12 Do you have any ideas or suggestions on how the process might be improved?

Part B Influences on Progress in Programme

13 You haven't completed the programme did you? How far did you get? What made you withdraw?

14 Whilst you were on it, what helped you to progress?
- What hindered your progress?
- Was/is there anything that would have enabled you to complete the programme?

15 Do you feel that any particular personal qualities are needed to complete the programme? If so, what are they?
- Which is more important - personal qualities or external factors (eg organisational support, structure of programme, tight deadlines for submission of assessed work etc.
- Show Inventory of Management Competencies – Do you consider that any of these competencies are relevant?
- What about the group itself?

Explore. probe and discuss.

16 How big a gap was there between any previous courses and starting this programme?

18 At end, switch off tape recorder and thank interviewee.
What happens next?

APPENDIX 13: Coding used for analysis of interviews

Background Questionnaire

General Grouping	Explanation	Sub-group
PROC	PROCESS Difficulties in answering questions, ambiguities etc Comments on LSQ Comments on IMC General instructions, letter, manger involvement Suggestions for improving the process	PROC/QU PROC/LSQ PROC/IMC PROC/GEN PROC/SUG
EMP	EMPLOYER SUPPORT General support from organisation Support from line manager Attitude towards qualifications	EMP/ORG EMP/LM EMP/Q
WL	WORKLOAD General comments on workload at work Personal time management	WL/GEN WL/TM
OBJ	REASONS FOR TAKING THE COURSE To achieve a qualification To improve job performance To improve chances of career progression Who suggested taking the course (self, manager etc.)	OBJ/QUAL OBJ/PERF OBJ/CAR OBJ/ST
IMP	IMPORTANCE OF QUALIFICATIONS Importance of NVQs Importance of management qualifications generally	IMP/NVQ IMP/Q
STRUCT	ISSUES RELATING TO THE COURSE Deadlines for submission of units/assignments Learning contract Support from Business School Developmental issues Producing the portfolio Understanding the Management Standards Quality of delivery Opportunity to influence course programme (participation) Course workload	ST/DEAD ST/LC ST/SUPP ST/DEV ST/PORT ST/STAN ST/QUAL ST/PART ST/WL
Other influences		
INFL	OTHER INFLUENCES ON PROGRESS Other factors that helped progress Other factors that hindered progress Role of the course group Importance of personal qualities versus other influences Support from home	INFL/+ INFL/- INFL/GRP INFL/COM INFL/HOME
PQ	PERSONAL QUALITIES Personal qualities identified Self motivation Learning styles	PQ INFL/MOT PQ/LS
PREV	PREVIOUS STUDY Comments on previous courses attended, time since previous studies	PREV
OUT	OUTCOMES FROM COURSE Comments on any outcomes or benefits from attending course	OUT

APPENDIX 14: Information on the dataset

Descriptor	Explanation	Scale

Data from the Background Questionnaire - Descriptive Variables

Age	Age in years	
Sex	Male or Female	1 = Male 2 = Female
Percentage of fees paid	Percentage of fees paid by employer	0 to 100%
Book costs paid	Whether employer contributed to the cost of course books	Yes/No
Time off for study	Whether employer gave time off for study.	Yes/No
Average hours worked	Average total number of hours worked per week during course	Actual number of hours

Data from the Background Questionnaire - Predictor Variables:

Flexibility

Flexibility of submission	The extent to which submission dates were fixed and assigned by the course tutor compared with participant control of submission dates	1 = tutor determined submission dates 0 = participant determined submission dates (Dummy variable)

Degree of Support:

Support from line manager	Whether line manager was supportive	5 point scale 1 = 'strongly disagree' 5 = 'strongly agree'

Support from organisation	Whether employer organisation was supportive	5 point scale 1 = 'strongly disagree' 5 = 'strongly agree'
Support from group	Influence that course group had on progress	5 point scale 1 = 'significant discouragement to progress' 5 = 'significant encouragement to progress'
Support from home	Influence that personal or home life had on progress	5 point scale 1 = 'significant discouragement to progress' 5 = 'significant encouragement to progress'

Work Pressures:

Work load	Self rating of work load during course	5 point scale 1 = 'undemanding' 5 = 'extremely demanding'

Motivating Influences:

Who proposed	Whether participants proposed analysis themselves for the course or were proposed by	1 = 'proposed themselves' 0 = 'proposed by others' (Dummy variable)
Objective to achieve a qualification	The importance of the objective "to achieve a qualification"	5 point scale 1 = 'irrelevant' 5 = 'essential'
Objective to improve job performance	The importance of the objective "to improve job performance"	5 point scale 1 = 'irrelevant' 5 = 'essential'
Objective to improve chances of career progression	The importance of the objective "to improve chances of career progression"	5 point scale 1 = 'irrelevant' 5 = 'essential'

Perceived Importance of NVQs:

Importance of NVQs now	Participant's view of whether NVQs are currently more important than a university award	5 point scale 1 = 'strongly disagree' 5 = 'strongly agree'
Importance of NVQs in future	Participant's view of whether NVQs will be more important than university award in the future	5 point scale 1 = 'strongly disagree' 5 = 'strongly agree'
Importance of NVQs to organisation	Participant's rating of the importance of NVQs in management to organisation	5 point scale 1 = 'irrelevant' 5 = 'essential'

Importance of management qualifications to organisation	Participant's rating of the importance of management qualifications in general to the organisation	5 point scale 1 = 'irrelevant' 5 = 'essential'

Data from the Learning Styles Questionnaire

LSQ activist score	Participant's score on the *activist* scale of the LSQ	1 to 20
LSQ reflector score	Participant's score on the *reflector* scale of the LSQ	1 to 20
LSQ theorist score	Participant's score on the *theorist* scale of the LSQ	1 to 20
LSQ pragmatist score	Participant's score on the *pragmatist* scale of the LSQ	1 to 20

Data from the Inventory of Management Competencies

Leadership	Motivates and empowers others in order to reach organisational goals	Combined STEN score 1 - 20
Planning and Organising	Organises and schedules events, activities and resources. Sets up and monitors timescales and plans.	Combined STEN score 1 - 20
Quality Orientation	Shows awareness of goals and standards and follows through.	Combined STEN score 1 - 20
Persuasiveness	Influences, convinces or impresses others.	Combined STEN score 1 - 20
Specialist Knowledge	Understands technical or professional aspects of work and updates.	Combined STEN score 1 - 20

Problem Solving & Analysis	Analyses issues and breaks them down. Makes systematic and rational judgements.	Combined STEN score 1 - 20
Oral Communication	Speaks clearly, fluently and in a compelling manner.	Combined STEN score 1 - 20
Written Communication	Writes in a clear and concise manner using appropriate grammar, style and language.	Combined STEN score 1 - 20
Commercial Awareness	Understands and applies commercial and financial principles	Combined STEN score 1 - 20
Creativity & Innovation	Creates new and imaginative approaches to work-related issues.	Combined STEN score 1 - 20

Action Orientation	Demonstrates a readiness to make decisions, take the initiative and originate action.	Combined STEN score 1 - 20
Strategic	Demonstrates a broad-based view of issues, events and activities.	Combined STEN score 1 - 20
Interpersonal Sensitivity	Interacts with others in a sensitive and effective way.	Combined STEN score 1 - 20
Flexibility	Successfully adapts to changing demands and conditions.	Combined STEN score 1 - 20
Resilience	Maintains effective work behaviour in the face of setbacks or pressure. Remains calm, stable and in control of themselves.	Combined STEN score 1 - 20
Personal Motivation	Commits self to work hard towards goals. Shows enthusiasm and career commitment.	Combined STEN score 1 - 20

APPENDIX 15: Validation of the Data

Analysis started with an examination of the raw data. Tests for normality were carried out on the data. For each variable, the histogram, box plot and normality plots were examined and the degree of skewness and kurtosis calculated. Tests on the complete dataset showed that the data were reasonably normally distributed with both skewness and kurtosis being within the generally accepted range -1 to + 1 (Rees, 1995). Figure 1 shows an example of the frequency distribution for the variable *importance of management qualifications to organisation* and Table 1 shows the statistics.

Figure 1: Frequency distribution for variable: *Importance of management qualifications to organisation*

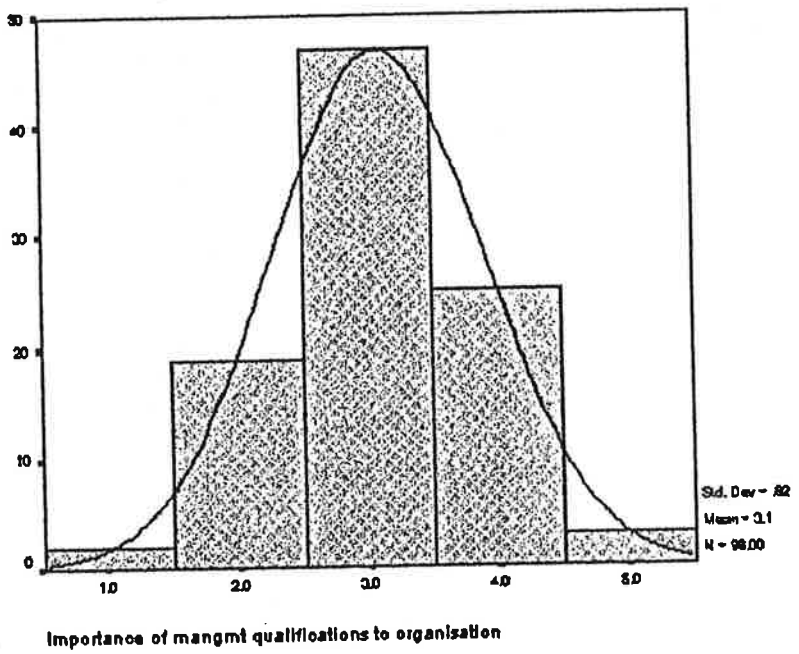


Table 1: Statistics for variable: *Importance of management qualifications to organisation*

	Mean	Median	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Importance of management qualifications to organisation	3.08	3.00	.82	-.037	.246	-.020	.488

Two variables were slightly out of this range – *Support from line manager* and *Support from home*. *Support from line manager* was on the limit for skewness at -1.01 for the full sample. The histogram is shown in Figure 2 and the statistics in Table 2. On closer examination, however, this is seen to be a result of a significant negative skew for Group NVQA, the successful NVQ participants. This reflects the much greater degree of support received from participant's line managers for the successful NVQ participants than either the unsuccessful NVQ group or the DMS group.

Figure 2: Frequency distribution for variable: *Line manager was supportive*

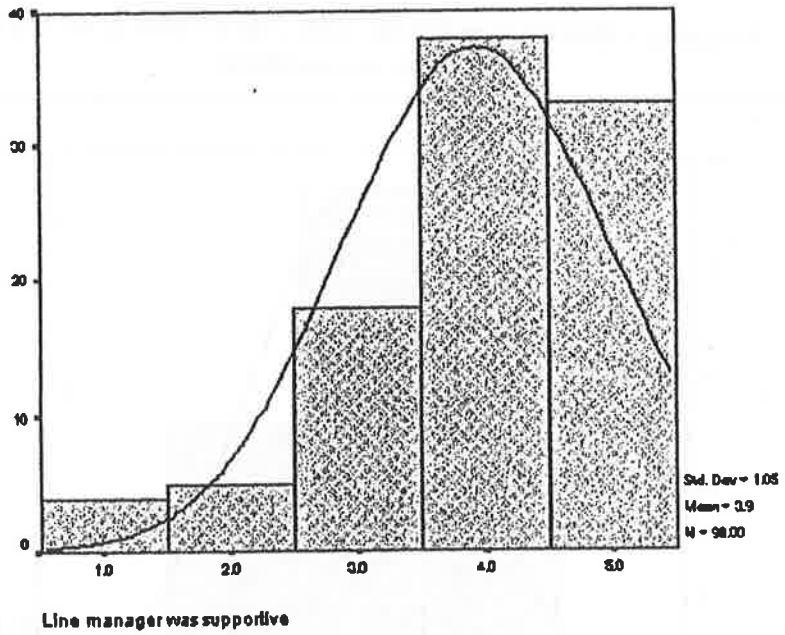


Table 2: Statistics for variables *Support from home* and *Support from line manager*

	Mean	Median	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Influence of home life	3.47	4.00	1.33	-.353	.244	-1.046	.483
Line manager was supportive	3.93	4.00	1.05	-1.008	.244	.728	.483

There was also one outlier on *Support from line manager*. This participant came from one particular company group where the support from the line managers was perceived to be very low and, in some cases, antagonistic. Few participants completed the programme and those that did were very scathing about the level of support. This outlier reflects a candidate who was successful in completing the course despite receiving no support from his line manager. Removal of the outlier improves normality for the successful NVQ group by reducing the level of skewness and kurtosis as shown in Table 3, although this is still outside the range –1 to +1 for the group.

Table 3: Skewness and Kurtosis for variable *Support from line manager* by group.

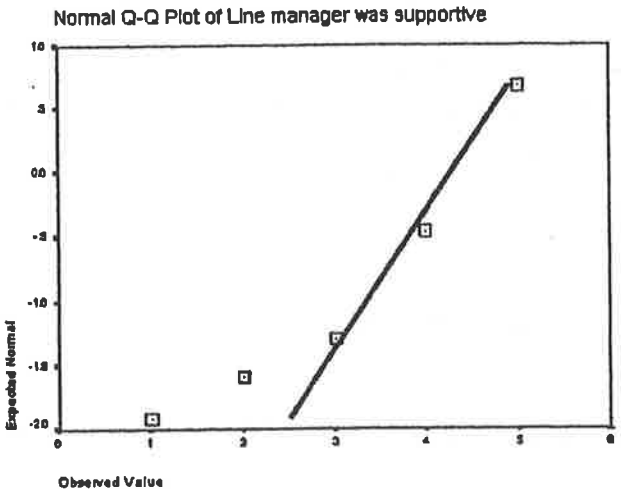
Statistic	All groups		Successful NVQ		Unsuccessful NVQ	Successful DMS
	All data	Outlier excluded	All data	Outlier excluded		
Skewness	-1.01	-0.97	-1.8	-1.24	-0.59	-0.86
Kurtosis	0.73	0.72	4.06	1.86	0.60	0.17

The question arises as to whether this value is an influencing variable or a true outlier. Examination of the normality plot shown in Figure 3 shows that it may be considered as an outlier Furthermore, Table 4 show that 80% of successful NVQ participants were supported by their line manager with a rating of 4 or 5 on the Likert scale used for this item. No other successful NVQ participant rated this as low as 1. However the inclusion of this value does not affect the overall results and it has therefore been left in the analysis.

Table 4: Participant ratings for *Support from line manager* by group.

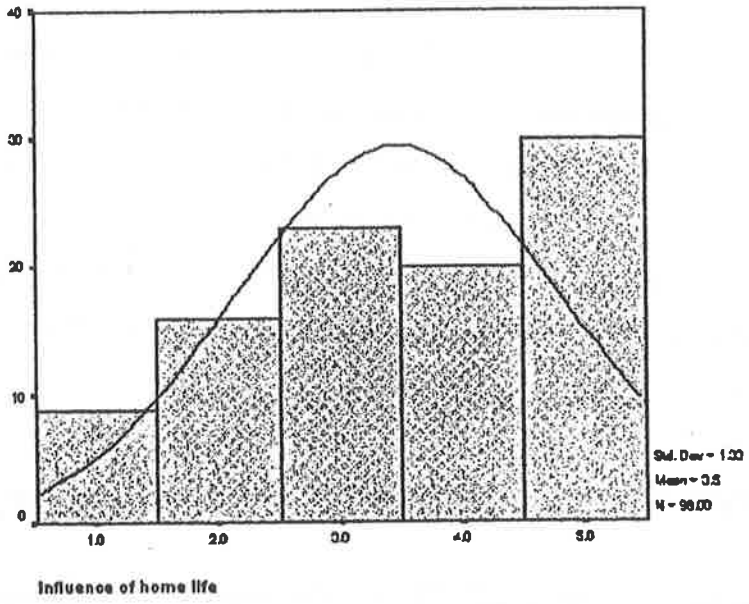
Support from line manager	All groups	Successful NVQ	Unsuccessful NVQ	Successful DMS
Not supported or neutral (Ratings 1 - 3)	27.6%	11.4%	40%	33.3%
Supported (Ratings 4 & 5)	72.4%	88.6%	60%	66.7%

Figure 3: Normality plot for variable *Support from line manger*



Support from home was marginally over on skewness at -1.05. The histogram for this variable is shown in Figures 4 and the relevant statistics in Table 2.

Figure 4: Frequency distribution for variable: *Support from home*



A review of this histogram shows that the distortion arises from the nature of responses rather than the presence of outliers. On the Likert scale, 51% of participants rated 4 or 5 for this variable representing either 'some encouragement' or 'significant encouragement' to progress. 23.5% rated *support from home* as neutral and 25.5% rated this as either 'some discouragement' or 'significant discouragement' to progress (1 and 2 on the scale). The effect of this will be considered later in the analysis.

APPENDIX 16: Descriptive Statistics for Variables

Table 1: Descriptive statistics for External Influences and Initial Goal Orientation

		N	Mean	Standard Deviation	Standard Error
Line manager was supportive	NVQ A	35	4.29	.93	.16
	NVQ B	30	3.73	.98	.18
	DMS	33	3.73	1.15	.20
	Total	98	3.93	1.05	.11
Organisation was supportive	NVQ A	35	4.26	.89	.15
	NVQ B	30	4.03	.76	.14
	DMS	33	3.88	1.08	.19
	Total	98	4.06	.93	.094
Influence of course group	NVQ A	35	3.97	.79	.13
	NVQ B	30	3.47	.82	.15
	DMS	33	4.30	.68	.12
	Total	98	3.93	.83	.084
Influence of home life	NVQ A	35	3.69	1.18	.20
	NVQ B	30	2.53	1.20	.22
	DMS	33	4.09	1.13	.20
	Total	98	3.47	1.33	.13
Workload during course	NVQ A	35	3.97	.62	.10
	NVQ B	30	4.47	.63	.11
	DMS	33	3.97	.77	.13
	Total	98	4.12	.71	.072
Objective to achieve a qualification	NVQ A	35	3.80	1.02	.17
	NVQ B	30	3.37	.93	.17
	DMS	33	3.88	.99	.17
	Total	98	3.69	1.00	.10
Objective to improve performance	NVQ A	35	4.03	.79	.13
	NVQ B	30	3.47	.73	.13
	DMS	33	3.45	.90	.16
	Total	98	3.66	.85	.086
Objective to improve career progression	NVQ A	35	3.89	.90	.15
	NVQ B	30	3.43	.94	.17
	DMS	33	3.64	1.11	.19
	Total	98	3.66	.99	.10
Importance of management qualifications to organisation	NVQ A	35	3.17	.92	.16
	NVQ B	29	2.93	.59	.11
	DMS	32	3.13	.87	.15
	Total	96	3.08	.82	.083

NVQ currently more important than University award	NVQ A	35	2.97	.71	.12
	NVQ B	30	2.43	.82	.15
NVQ will be more important than university award in future	NVQ A	35	3.26	.74	.13
	NVQ B	30	2.97	.93	.17
Importance to organisation of NVQs	NVQ A	35	3.03	.98	.17
	NVQ B	29	2.76	.74	.14

Table 2: Test of homogeneity of variance for external influences common to all groups

	Levene Statistic	df1	df2	Sig.
Line manager was supportive	1.017	2	95	.365
Organisation was supportive	1.474	2	95	.234
Influence of course group	.485	2	95	.617
Influence of home life	.509	2	95	.603
Workload during course	1.494	2	95	.230
Objective to achieve a qualification	.403	2	95	.669
Objective to improve performance	.839	2	95	.436
Objective to improve career progression	.753	2	95	.474
Importance of management qualifications to organisation	3.666	2	93	.029

Table 3: Descriptive statistics for Learning Style scores

		N	Mean	Standard Deviation	Standard Error
ACTIVIST	NVQ A	35	9.34	3.84	.65
	NVQ B	30	8.87	3.84	.70
	DMS	32	9.38	4.05	.72
	Total	97	9.21	3.88	.39
REFLECTOR	NVQ A	35	12.34	3.98	.67
	NVQ B	30	13.90	4.01	.73
	DMS	32	12.47	3.56	.63
	Total	97	12.87	3.88	.39
THEORIST	NVQ A	35	12.40	3.20	.54
	NVQ B	30	12.07	3.13	.57
	DMS	32	12.00	3.95	.70
	Total	97	12.16	3.41	.35
PRAGMATIST	NVQ A	35	13.69	2.74	.46
	NVQ B	30	13.80	2.63	.48
	DMS	32	13.78	3.09	.55
	Total	97	13.75	2.80	.28

Table 4: Test for homogeneity of variance for Learning Style scores

	Levene Statistic	df1	df2	Significance
ACTIVIST	.168	2	94	.846
REFLECTOR	.022	2	94	.979
THEORIST	1.516	2	94	.225
PRAGMATIST	.011	2	94	.989

Table 5: Descriptive statistics for personal competencies

PERSONAL COMPETENCY	GROUP	N	Mean	Standard Deviation	Standard Error
IMC01 LEADERSHIP	NVQ A	35	13.6857	2.8130	.4755
	NVQ B	30	10.9833	3.6305	.6628
	DMS	32	11.1250	2.8455	.5030
	Total	97	12.0052	3.3186	.3370
IMC02 PLANNING & ORGANISING	NVQ A	35	12.5429	2.8835	.4874
	NVQ B	30	11.5667	2.8154	.5140
	DMS	32	11.3594	3.4646	.6125
	Total	97	11.8505	3.0815	.3129
IMC03 QUALITY ORIENTATION	NVQ A	35	12.3143	3.0681	.5186
	NVQ B	30	11.8167	3.6163	.6602
	DMS	32	12.3438	3.4698	.6134
	Total	97	12.1701	3.3509	.3402
IMC04 PERSUASIVENESS	NVQ A	35	10.7000	3.2499	.5493
	NVQ B	30	10.9000	2.7050	.4939
	DMS	32	9.7969	2.7704	.4897
	Total	97	10.4639	2.9424	.2988
IMC05 SPECIALIST KNOWLEDGE	NVQ A	35	11.7571	3.4136	.5770
	NVQ B	30	13.0333	3.2349	.5906
	DMS	32	11.4375	2.9423	.5201
	Total	97	12.0464	3.2469	.3297
IMC06 PROBLEM SOLVING & ANALYSIS	NVQ A	35	11.4000	2.3726	.4010
	NVQ B	30	10.8167	2.6861	.4904
	DMS	32	10.1250	2.4462	.4324
	Total	97	10.7990	2.5276	.2566
IMC07 ORAL COMMUNICATION	NVQ A	35	12.0429	2.7796	.4698
	NVQ B	30	11.4000	3.4750	.6345
	DMS	32	12.6719	3.0733	.5433
	Total	97	12.0515	3.1137	.3162
IMC08 WRITTEN COMMUNICATION	NVQ A	35	11.7714	2.5010	.4227
	NVQ B	30	10.4500	3.0239	.5521
	DMS	32	11.0781	3.8377	.6784
	Total	97	11.1340	3.1668	.3215
IMC09 COMMERCIAL AWARENESS	NVQ A	35	8.2286	3.3789	.5711
	NVQ B	30	9.6000	4.1635	.7601
	DMS	32	9.1406	3.5746	.6319
	Total	97	8.9536	3.7068	.3764
IMC10 CREATIVITY & INNOVATION	NVQ A	35	10.2000	3.1441	.5314
	NVQ B	30	11.5500	3.4098	.6225
	DMS	32	11.2344	4.1015	.7251
	Total	97	10.9588	3.5763	.3631

Table 5: (continued) Descriptive statistics for personal competencies

Personal Competency	Group	N	Mean	Standard Deviation	Standard Error
IMC11 ACTION ORIENTATION	NVQ A	35	10.4286	3.1603	.5342
	NVQ B	30	11.7667	2.7628	.5044
	DMS	32	10.0781	2.8712	.5076
	Total	97	10.7268	3.0026	.3049
IMC12 STRATEGIC	NVQ A	35	11.3714	3.1491	.5323
	NVQ B	30	10.6333	2.7194	.4965
	DMS	32	11.6406	2.8291	.5001
	Total	97	11.2320	2.9164	.2961
IMC13 INTERPERSONAL SENSITIVITY	NVQ A	35	13.2714	3.2161	.5436
	NVQ B	30	11.2667	3.1995	.5841
	DMS	32	12.0938	3.4088	.6026
	Total	97	12.2629	3.3464	.3398
IMC14 FLEXIBILITY	NVQ A	35	11.2143	3.0709	.5191
	NVQ B	30	10.2667	3.6145	.6599
	DMS	32	11.3125	3.0127	.5326
	Total	97	10.9536	3.2300	.3280
IMC15 RESILIENCE	NVQ A	35	11.0571	2.9575	.4999
	NVQ B	30	11.2167	3.1036	.5666
	DMS	32	9.3125	3.4612	.6119
	Total	97	10.5309	3.2587	.3309
IMC16 PERSONAL MOTIVATION	NVQ A	35	10.5857	3.6329	.6141
	NVQ B	30	10.6000	3.2013	.5845
	DMS	32	12.3906	3.3929	.5998
	Total	97	11.1856	3.4943	.3548

Table 6: Test of homogeneity of variance for personal competencies

	Levene Statistic	df1	df2	Significance
IMC01 LEADERSHIP	.705	2	94	.497
IMC02 PLANNING & ORGANISING	1.750	2	94	.179
IMC03 QUALITY ORIENTATION	.974	2	94	.381
IMC04 PERSUASIVENESS	.995	2	94	.374
IMC05 SPECIALIST KNOWLEDGE	.152	2	94	.859
IMC06 PROBLEM SOLVING & ANALYSIS	.104	2	94	.902
IMC07 ORAL COMMUNICATION	.882	2	94	.417
IMC08 WRITTEN COMMUNICATION	3.926	2	94	.023
IMC09 COMMERCIAL AWARENESS	.656	2	94	.521
IMC10 CREATIVITY & INNOVATION	2.916	2	94	.059
IMC11 ACTION ORIENTATION	.450	2	94	.639
IMC12 STRATEGIC	.566	2	94	.570
IMC13 INTERPERSONAL SENSITIVITY	.174	2	94	.840
IMC14 FLEXIBILITY	.306	2	94	.737
IMC15 RESILIENCE	.325	2	94	.723
IMC16 PERSONAL MOTIVATION	.242	2	94	.785

APPENDIX 17: Factor Analysis for Personal Competencies

Table 1: Factor Analysis on personal competencies - Rotated component matrix

	Component						
	1	2	3	4	5	6	7
01 Leadership	-0.05	0.13	0.01	-0.18	0.85	0.04	-0.08
02 Planning & Organising	-0.07	0.76	0.06	0.12	0.10	0.04	-0.16
03 Quality Orientation	0.19	0.76	0.07	0.05	0.00	-0.06	0.05
04 Persuasiveness	0.42	-0.35	0.03	0.18	0.55	-0.20	0.24
05 Specialist Knowledge	0.20	0.07	0.08	0.70	-0.05	-0.01	-0.06
06 Problem solving & analysis	-0.13	0.07	0.02	0.85	-0.05	-0.07	0.09
07 Oral Communication	-0.01	-0.33	-0.08	-0.03	0.10	0.09	0.79
08 Written Communication	-0.18	0.42	-0.18	0.11	-0.20	-0.06	0.69
09 Commercial Awareness	0.06	0.07	0.70	0.00	-0.09	0.02	-0.25
10 Creativity & Innovation	0.42	-0.43	0.57	0.18	-0.03	0.04	-0.07
11 Action Orientation	0.83	-0.05	-0.06	0.10	0.26	-0.07	-0.16
12 Strategic	0.07	0.26	0.71	0.21	0.40	-0.04	0.09
13 Interpersonal Sensitivity	-0.68	-0.11	-0.23	-0.10	0.32	0.35	0.03
14 Flexibility	-0.12	-0.09	0.12	-0.15	-0.11	0.88	0.09
15 Resilience	0.06	0.12	-0.49	0.22	0.27	0.63	-0.12
16 Personal Motivation	0.62	0.25	0.30	-0.24	-0.09	0.33	0.03
Factor Cronbach Alpha Coefficient	-0.60	0.55	0.54	0.50	0.33	0.47	0.35

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 12 iterations.

Table 2: Factor Analysis on personal competencies – Total Variance explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumul %	Total	% of Variance	Cumul %	Total	% of Variance	Cumul %
1	2.781	17.38	17.38	2.78	17.38	17.38	2.04	12.73	12.73
2	2.040	12.75	30.13	2.04	12.75	30.13	1.95	12.20	24.92
3	1.665	10.41	40.54	1.66	10.41	40.54	1.77	11.05	35.98
4	1.566	9.79	50.32	1.57	9.79	50.32	1.54	9.61	45.58
5	1.234	7.72	58.04	1.23	7.72	58.04	1.52	9.52	55.11
6	1.183	7.39	65.43	1.18	7.39	65.43	1.46	9.14	64.25
7	1.132	7.07	72.50	1.13	7.07	72.50	1.32	8.26	72.50

Extraction Method: Principal Component Analysis.