

Newcastle University

**The Importance of Transition for Disaffected Young People
Moving from School to Post-School: Programme for
Alternative Vocational Education (PAVE) - An Evaluation.**

**Thesis Submitted Towards the Award of
Doctorate in Educational Psychology**

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With the exception of the help and collaboration of the above colleagues, this is the sole and original work of

Alan Haughey.

Abstract

This thesis describes an evaluation of a transition project called the Programme for Alternative Vocational Education (PAVE). The project is designed for young people aged 14 to 16 yrs who have become disengaged from secondary school through non-attendance and/or exclusion. A re-funding bid for PAVE was imminent, and the evaluation was intended to help inform this bid.

The evaluation considered both the relative success of an adult led programme, such as PAVE, in re-engaging young people and an examination of the mechanisms which contributed to that success. A detailed consideration of the psychology of change was undertaken as an explanatory framework against which transition projects such as PAVE could be considered. The relevance of these theories to adolescence, Complexity Theory and Chaos Theory is explored in relation to the potentially supportive contexts of family and school.

The methodology used drew on a mixed models approach and utilised Realistic Evaluation as an explanatory background for the findings.

Four main approaches to addressing the evaluation were as follows:

1. An examination of PAVE's ability to re-engage young people's attendance (n = 91)
2. An analysis of post-school destinations for PAVE participants (n = 191)
3. An examination of any association between PAVE attendance and quality of first destination post-PAVE (n = 89)
4. Analysis of structured interviews with current participants on entry to and completion of their PAVE placement (n = 11).

The interviewed group (n = 11) was a subset of the 'attendance' group (n = 91), as was the first destinations group (n = 89), which, in turn, was a subset of the 'post-PAVE' first destinations group (n = 191).

PAVE was shown to be effective in re-engaging young people, particularly boys, who had become disengaged from their secondary school programmes, with an adult led structured programme. A significant mechanism which contributed to that success was the focus on building positive relationships between PAVE staff and the participating young people. Feedback from the evaluation to PAVE staff also led to improved transition procedures for young people joining the programme.

Consistent with Complexity Theory, PAVE, a relatively short-term intervention, led to unexpectedly large, reported, positive changes in young people's attitudes to learning. It is concluded that change of this nature in young people's attitude to learning will prepare them for long-term employability opportunities rather than only short-term employment. This finding matches the Scottish Executive's drive to reduce NEET statistics and improve social inclusion.

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Chapter 1 Introduction

1.1 PAVE - The programme

This thesis outlines an evaluation which was undertaken in 2005/2006 of a programme which had been running in Midlothian Council, Scotland, since 1998. The programme was set up to offer a positive link for young people, who had been termed 'disaffected', from school into work, training or further education (FE) college. The programme was named 'Programme for Alternative Vocational Education' (PAVE), and, as suggested by the title, tried to offer a curriculum involving a work-training element in addition to a classroom based educational experience for the young people in attendance (see Appendices 9 & 10, pp.263 & 266, for descriptive leaflets).

The programme appeared to be reasonably successful from anecdotal evidence largely supplied from the monitoring procedures of the staff working at PAVE. The evidence indicated reasonable levels of attendance and a relative lack of adverse behavioural issues with the young people. However, there had been no external evaluation of the programme. Funding for the programme was soon to become an issue as explained in more detail later (pp.13 – 14). The author had had an involvement in setting up the programme but no close association with it in recent years.

Rather than attempt an evaluation of PAVE which indicated successful/not successful, the author decided to utilise more modern methods of programme evaluation, such as Realistic Evaluation as described by Pawson and Tilley, (2000) (see Chapter 3, Methodology pp.112

– 127). The research question developed more towards the following: To what extent is PAVE successful and what in particular does it do which might help it achieve success for the young people involved?

PAVE originally comprised an educational component, a work based training component and an FE college experience. Its purpose was to offer a positive experience for young people who were either disengaged, or becoming so, from their school. The original targeted group were young people who were not attending school, either because they had stopped attending school or had been excluded from it and were receiving no educational support. These young people were often on the waiting list for Outreach Teaching - a series of individual sessions with a trained teacher in the Psychological Service centre (maximum of three hours per week).

This original group comprised 10 young people aged 15 years who had completed four years of secondary schooling and their Standard Grade coursework in June, but were not eligible to leave school until the following December (referred to as the Winter Leavers group). This group received low priority for outreach teaching owing to the pressure of work to try to help other 4th year pupils, who were not in school, complete their Standard Grade course work successfully. PAVE therefore took these 'winter leavers' as the original group. It is notable that after the first group programme was run, the college component (one afternoon per week in a college class of choice) was dropped. The young people found the college classes too demanding and unsupportive and too much like school to engage their interests.

Young people were referred to the programme on a standard form by their school, support base if already excluded, or other agency. They did not need to be, or have previously been, referred to Psychological Services to participate in PAVE. The programme offered both:

- (i) supported work and workshop experiences
- (ii) supported small group education

The assumption in instigating this project was that young people who were already disengaged from school learning could benefit from a structured, extended, supported vocational experience to engage them with the world of work/training/further education when they had officially left school. It was assumed that a programme which offered vocational training in addition to basic educational skills could help motivate the young people to re-engage with adult led structures, such as PAVE, the work place or college, and thereafter smooth the transition for them to the world of paid employment. Many of the young people had some measure of difficulty or failure with school learning or peers and often required some intensive tutorial support to overcome basic problems with literacy and numeracy. Personal support was available from the staff once relationships were established.

As a result of PAVE's apparent early success, informed by the staff monitoring the young people's views on the programme, two further groupings of young people were offered similar programmes by the same core staff group. Extra support staff were employed using money from the European Social Fund. In addition to the Winter Leavers group of 5th year students, which operates from August to December, a 4th year students Summer Leavers group, operating from January to June, was initiated. These 4th year students were finding

difficulty maintaining a positive school placement. Most recently a full year programme for a small group of young people who were struggling to maintain engagement with their 3rd year curriculum was also started. This programme essentially replaces their 4th and final year at school running from August to June of the following year. This latter group was not involved in the evaluation.

Part of the prompting to initiate a formal, external evaluation of PAVE was the time limited aspect of the European funding. It was known that changes to the operation of the European Social Fund could jeopardise the continuation of the Summer Leavers group (see p.14 above) and full year group. The staff employed using the European fund money were also able to add value to the original Winter Leavers group (see p.13 above) by, in particular, offering one to one support for wider personal/social issues which the young people may have been encountering.

The use of the label 'disaffected' by schools and its use as an entry criterion to PAVE raised a significant issue. Labelling of children and young people who may be having difficulty in the context of school has for some time been considered inappropriate (Gillman *et al.*, 2000; Lauchlan & Boyle, 2007; Maras, 1996). It has been clarified in many studies that a focus on the child or young person as 'disaffected' is not helpful, rather, that they can become involved in a process of disaffection which causes difficulty in school (Bennett, 2005; Cameron, 1998; Fan & Chan, 1999; Rees & Bailey, 2003; Solity, 1996). This process of disaffection is determined by many factors related not only to academic learning and the nature of the curriculum used for its delivery, but the vital human aspects of school such as

peer and teacher interactions and available home supports (Cullen & Ramatour, 2003; Roffey, 2004). Where references to 'disaffected' appear in the study, these refer to this process of disaffection rather than suggest anything inherent in the young person or their personal circumstances. This process of disaffection can, for many children and young people, lead to a consequent disengagement from the adult led structures with which they are expected to interact, for example, school, and the need for special programmes to address the resultant disengagement (DfES, 2007a; Raffe, 2002).

The recognition of this process of disaffection with schooling has become more evident and explicit in recent years. The importance of children and young people's emotional status in school is recognised as a significant aspect of schooling. The introduction of measures to support the emotional well being of children and young people via an explicit 'emotional curriculum' illustrates this new focus and has included the following:

- Circle time (Moseley, 2007)
- Circle of friends (Newton & Wilson, 2007)
- Friends (Barrett *et al.*, 2006; Brown *et al.*, 2005)
- Emotional intelligence training (Lucas, 2007; McCluskey, 1997)
- Resilience training (Gillham & Reivich, 2007)

The introduction of these programmes has highlighted that it may not be the child who is 'disaffected', but that the experience of schooling for some children and young people is not positive and can lead to a process of disaffection which leads them away from the basic aims of schooling rather support them in achieving those aims. The above programmes can

sometimes help children gain insights into the important area of relationships in a learning context and learn approaches which help deal with the complex interplays which take place in schools. The research literature regarding the disaffection of young people at the secondary stage of school education is discussed in Chapter 2, Adolescence, Section 2.2.3, p.90.

Although PAVE did not set out to offer a specific ‘emotional curriculum’ for the young people referred to it, there was a recognition that these young people who had become disengaged from school could benefit from some emotional support. The reason for the introduction of PAVE was that it should offer young people who had been adversely affected by their schooling a chance to re-engage in a positive experience of adult led activities which helped bridge their transition into post-school life. Transition was therefore a main focus for the study and the factors which were associated with positive transitions a closely related theme of the evaluation. Given that the young people involved in PAVE would not be returning to a school environment the management of this transition was seen as of considerable importance.

1.2 Policy Context

The secondary school curriculum maintains a subject base reflecting the importance of bodies of knowledge rather than a focus on the most effective means for young people to learn. This can lead to some young people becoming disengaged from secondary school either physically by truanting or psychologically by opting out of learning (Scottish Executive, 1999b). There may be little recognition of learning as a social phenomenon, as

opposed to a purely cognitive exercise, as outlined by Vygotsky (Daniels, 2005). Where emphasis is placed on academic learning to the exclusion of a young person's general development, academic success and an associated attainment focus can lead to young people who fail in the academic area of learning becoming disengaged from the school and its perceived ethos (Lown, 2005). The effect of this disengagement can carry through to post-school leading to social exclusion as illustrated by the UK government's Connexions strategy to attempt to deal with the problem (DfES, 1999; Weinstock, 2004). Following from the Green Paper, (Department for Education and Skills, 2002), Pathfinder groups in England and Wales were invited to bid for funding to set up projects to address partnership working to secure improved outcomes for the 14-19 age group. As indicated in an early evaluation of the Pathfinders work, there was an intention to shift this balance towards a greater emphasis on appropriate learning and coherent programmes for young people linking to post-school (Higham *et al.*, 2004). These initiatives have now been overtaken by the UK Government's 14–19 Education and Skills White Paper (DfES, 2005a) and the Increased Flexibility Programme.

The Scottish Executive first highlighted the need for an early focus on the long term aims of education beyond school by the introduction of the Determined to Succeed strategy (Scottish Executive, 2002). This strategy attempted to encourage all children and young people to develop enterprise skills as part of a lifelong learning agenda.

The Scottish Executive further recognised the narrow focus of the schools' curriculum in Scotland and introduced a radical change in the context for educational and curricular

planning with the publication of 'A Curriculum for Excellence' (Scottish Executive, 2004c, 2006a). All school staff (for age groups 3-18 years) were encouraged to consider how the curricular experiences for all children were able to contribute to the following '4 Capacities':

- Successful learners
- Confident individuals
- Responsible citizens
- Effective contributors

which focus on fitting children and young people for their lives beyond school.

Learning is more and more being valued as a preparation for life, rather than a means to an end such as passing external examinations, and has become a political focus for improving social cohesion in society (Scottish Executive, 2003a). Although the issues for disaffected groups of young people apply nationally across the UK (see, for example, 'Bridging the Gap', the first reference to the group Not in Education, Employment or Training (NEET) (Scottish Executive, 1999a) and the 14-19 Education and Skills Strategy (DfES, 2005a)), the main focus of this paper is on Scottish findings and how they apply to the Scottish context. In particular, the Beattie report triggered a substantial political emphasis on preventing social exclusion by putting a renewed focus on appropriate supports for the 16-19yr age group (Scottish Executive, 1999b). These supports included:

- The introduction of key worker support and mentoring
- Assessment and tracking of young people
- Developing inclusiveness in Further Education
- Improving training provision

- Improving transition arrangements to employment
- Considering development of a Post-School Psychological Service

(Scottish Executive, 2003b)

The responsibility for implementing these initiatives was undertaken by Careers Scotland, the Scottish Further Education Funding Council, Enterprise Networks and the Scottish Executive. It is worth noting that the development and success of Post-School Psychological Services in Scotland followed the recommendations of the Professional Development Programme for educational psychologists study group which examined the original Beattie proposals and emphasised the value of the strategic role which educational psychologists played in promoting the working together of different agencies (Boni, 2001; MacKay *et al.*, 2006). (The PAVE programme was initiated in exactly this way in 1997 by Midlothian Psychological Service noting a gap in provision and an opportunity for development).

The Scottish Executive Department of Enterprise, Transport and Lifelong Learning had been collecting data for some years (Scottish Executive, 2005g) on the effect of disaffection on young people and the consequent difficulties for their later life chances. Analysis of this data led to a focus on the group of young people now referred to as the NEET group, and the gathering of statistical data on their lack of progress. The research had the following main conclusions:

- *‘Scotland’s NEET statistics had changed little since 1999. In comparison to English statistics, the NEET group is larger in Scotland (13.9% as opposed to 10.4% for England among 16-18 year olds);*

- *'Themes or risk factors across the NEET group which appear to be most prevalent are: deprivation; financial exclusion; low attainment; weak family and other support networks (such as peers); stigma and attitudes of others and debt-aversity;*
- *'Most NEET-based policies in Scotland are employability focussed and there is a lack of evidence on the impact of these policies, particularly in terms of whether these translate into positive, longer term labour market outcomes;*
- *'More recent 'holistic' policy interventions (such as the Beattie Inclusiveness projects, Get Ready for Work and Integrated Community Schools) appear to offer more targeted support for the NEET group and address the removal of risk factors and barriers;*
- *'Other recent policy interventions such as widening choice at the pre-16 stage (for example, through school/FE collaborations) and offering financial incentives (such as Education Maintenance Allowances) are offering early, positive signs for the NEET group and those at risk of becoming NEET;*
- *'There appears to be a need to examine how individual policies combine to offer incremental and sequential support to the NEET group. There also appears to be further scope for the sharing of practice between Scotland and the rest of the UK, as well as understanding policy and practice beyond the UK setting.'*

(York, 2005, p.1.)

Further attempts to reduce the numbers of those who are NEET are being initiated by the Scottish Executive (2006d). Several initiatives focussed on geographical areas of

particular demographic concern such as Glasgow, Clackmannanshire and Dundee, among others. There was also a focus on particular groups of young people most at risk of becoming NEET including care leavers, persistent truants and low attainers in school.

The Executive outlined a strategy which had four main strands:

- *'Stem the flow into NEET – prevention rather than cure;*
- *'Have a system-wide (pre and post 16) focus on, ambitions for, ownership of – and accountability for – the NEET group;*
- *'Prioritise education and training outcomes for the NEET group as a step towards lifelong employability, given their low attainment profile;*
- *'Position NEET reduction as one of the key indicators for measuring the pre and post 16 system's success.'*

(Scottish Executive, 2006e, p.2.)

In order to implement this strategy, the Executive distributed funds to the various local authorities based on their NEET profile and level of perceived need. The most significant policy imperative of the strategy was the emphasis on lifelong learning and employability. There was a clear recognition that schooling should not only be about preparing children and young people for a job, but preparing them for a more flexible future where employability skills were more important than immediate employment.

Two significant strands which arose from the strategy were:

- (i) The focus on prevention for low attainers and truants, that is, groups who become easily disengaged from the opportunities offered by schools.
- (ii) Encouraging agencies to work together to offer an effective transition, from school through to post-school, options for all young people, rather than seeing school and post-school as separate entities with little connection.

The first of these strands is highlighted in the report 'Missing Out' (HMIE, 2005a). This report focussed on the lowest performing 20% of the school population. Despite general trends in the school population towards improved attainments, this grouping's attainments were static, causing a widening of the attainment gap between successful and not so successful learners. The emphasis on achievement to sustain the Four Capacities rather than a narrow focus on attainments reinforced a consistent message to schools.

It was evident that this lowest attaining group in school presented with a large number of risk factors which overlapped with the risk factors associated with becoming part of the NEET group (HMIE, 2005a). In addition to offering suggestions for effective practice, as deduced from school inspections, the report also recommended the need for better partnership working between schools and colleges of further education. The second strand, above, emphasised in 'More Choices, More Chances' (Scottish Executive, 2006e) has been the focus of many reports (Scottish Executive, 2005a, b, c; g; HMIE, 2005b, c) which identified the need to improve the transition from school to post-school services such as FE college. Particular recommendations encouraged:

- Working together at an early stage in the transition

- Identifying appropriate roles and responsibilities
- Formalising certain agreements to ensure delivery of services
- Involving and listening to the young person ensuring that they are active partners in their own transition process

‘More Choices, More Chances’ (Executive, 2006c) had further strategic recommendations which highlighted the need for the Executive’s own departments such as Health, Social Work, Enterprise, Transport and Lifelong Learning and Education to incorporate more joined up planning and responsibility. Local partnerships were seen as key to delivering action which could address the problem of NEET. These partnerships were to be based around current structures with local authorities being given the lead role (Executive, 2006c). It was hoped, for example, that by linking up statutory requirements such as Children’s Services Plans and Regeneration Outcome Agreements, a coherent approach would be taken in local areas. The action points for these local partnerships are specific and detailed in order that the newly formed ‘NEET Delivery Team’ could monitor and evaluate the NEET strategic and operational plans created at a local partnership level (Executive, 2006c, page 42). This process has started (local communication). This new NEET team will also coordinate the communication across Scottish Executive departments and the local partnerships (Scottish Executive, 2006c).

Although the PAVE project pre-dated the NEET agenda outlined above, it became evident a few years after PAVE was instigated that the NEET agenda seemed to be subsumed within the aims of PAVE. It would therefore be a particular marker of success for PAVE if it could

demonstrate a reduction in the likelihood of young people, who were disengaged from their school experience, adding to the NEET statistics.

1.3 Local Context

Midlothian Council borders Edinburgh City to its north and west, East Lothian Council to its east and Scottish Borders to its south. Edinburgh's main commercial interests are in Finance, Government and Tourism; East Lothian's economy is largely Agriculture with some prior Coal Mining; Scottish Borders also has a largely rural economy with a focus on Agriculture and Textiles. Midlothian, although rural, has a small Agricultural economy but its main industry was Coal Mining. Apart from the Scottish National Mining Museum, there is now no mining presence in this part of Scotland. Midlothian is trying to establish a Scientific Technology base to replace former industries as a basis for training and employment. However, it is notable that more than half the working population of Midlothian travel to and work in Edinburgh (Midlothian Statistical Group, personal communication, September 2005).

Midlothian has had a significant gap in offering training and employment to young people who did not traditionally progress to Higher or Further Education. Skills and trades have not been replaced by the closure of the mining industry and its replacement with Science Parks and Science Centres. These issues are reflected in the figures produced by the Scottish Executive in relation to progression for young people leaving school and discussed below.

The Scottish School Leavers Survey 2004 (Scottish Executive, 2004d) indicates that the number of young people in Midlothian generally going on to further education college or continuing with training is 23%. The general population of Midlothian's young school leavers entering employment for the first time is 41%.

However, one of the issues for young people leaving school and entering the job market immediately is sustainability. The term 'churning' or 'subject to multiple transitions' (Scottish Executive, 1999a), has been used to describe this problem where young people only stay in one position for a relatively short time after leaving school and either leave their first position voluntarily or are sacked and move on to the next job or training programme, with a high risk of the process being repeated.

This issue is of particular importance in Midlothian as the findings from the Scottish School Leavers Survey illustrates in Table 1 below.

Table 1 Comparison of Groups Entering First Time Employment and Rate of Uptake of Job Seeker's Allowance – Midlothian and Scotland

Cohort	First Time Employment	Claiming Job Seeker's Allowance (JSA) (due to unemployment)
Midlothian	41%	32%
Scotland	25%	28.8%

Although 41% of the general youth population of Midlothian enter employment immediately on leaving school, only 25% of the Scottish population as a whole do so. Rather than the 41% figure being seen as a success indicator, it is considered a problem in Midlothian. This issue is made clearer by considering the proportion of young people in Midlothian claiming Job Seekers Allowance (JSA) - 32%, which is higher than the Scottish average of 28.8% (NOMIS, 2007). These figures illustrate that the jobs attained by many first time school leavers are not sustained. Although securing a first position on leaving school, this sizeable proportion of 32% claiming JSA indicates that many of the 41% entering the job market for the first time end up claiming benefit within a short period. The 41% figure and the relatively high JSA figure of 32% taken together is an indicator of the 'churning' effect and also that these school leavers are not, in general, entering sustainable occupations.

As Table 2 below illustrates, when compared to its immediate neighbours Edinburgh and East Lothian, Midlothian fares particularly poorly in the number of young people entering further or higher education – 48%, 51% and 41% respectively.

Table 2 Young People Entering FE/HE or Further Training on Leaving Local Authority Schools in Areas of Scotland

Cohort	Entering FE/HE or Further Training
Midlothian	41%
Scotland	50%
Glasgow	40%
Edinburgh	48%
East Lothian	51%

The extent of this problem is underlined further when compared with the Scottish average of 50% entering both sectors, or Glasgow (designated as the most deprived area of Scotland) at 40% (note the Edinburgh figure does not take into account the substantial private school sector population living in Edinburgh entering HE or FE which would inflate the figure of 48% considerably – 22% of Edinburgh school age children attend private schools, as compared to Glasgow’s 9%, and 4% for Scotland as a whole (Scottish Government, 2007). The fact that the Midlothian figure for uptake of FE/HE or further training is closer to that of Glasgow than to the Scottish average is a measure of the serious nature of the problem. Not enough young people in Midlothian enter the arena of further or higher education to obtain qualifications which can help them into sustainable post-school careers as compared with short term jobs with a high risk of ‘churning’.

1.4 Theoretical Framework

Undertaking an evaluation of a project such as PAVE offered the opportunity to investigate the psychology underpinning the whole area of Transition. There is a body of evidence which reports that Transitions are a useful focus in education (and elsewhere) to improve the experience of children and young people in dealing with change (DfES, 2007b; Morningstar, 2007). The nature of Transitions and their place in the development of young people at the adolescent stage raises particular issues (Hendry *et al.*, 1996). As discussed in detail later, Ch.2, Section 2.2, p.79, the rapidity and complexity of change at this stage of development causes particular stresses for young people. This investigation will identify positive aspects of Transition and their application in the field of education with a particular focus at the secondary stages of school education.

Although PAVE was specifically designed as an intervention which could help young people having difficulty at secondary school, the original planning could be considered naive in that it was not based on any specific theoretical model of intervention to support the young people. At the time of its planning, the focus was simply on a model which both fitted local infrastructure (Midlothian Training Services) and the notion that if academic learning at secondary school was not motivating the young people, then a vocationally centred curriculum with the focus on transition to post-school might be more motivating for them.

The structure of PAVE also fitted with the generally accepted view in education that removing young people from the currently failing context, secondary school, to a new context with a higher staff to pupil ratio could offer the opportunity for positive change to

occur in their lives (DfES, 2005b). The assumption behind this form of intervention is that the young people, removed to a different context with more support, will avail themselves of this support and utilise it to create positive change in their functioning. As the DfES report indicates, these assumptions are not always valid. What these well-intentioned interventions do not make explicit is the psychological model on which the intervention is based.

However, from the schools' perspective, the 'problem' has been solved. More realistically, it has simply shifted its context away from the school.

Models of educational change can be comprehensive, but are more often descriptive in nature and have no explicit focus on the psychology or psychological model being drawn upon for the projected success of the intervention. An example of this is the detailed 3 stage model of educational change supported by the UK government and which formed the basis for considerable professional development in schools and LEAs (Fullan, 2005).

The current study tried to address the theoretical basis for change by considering the following:

- a) Young people are in a complex and demanding educational and social situation in secondary school (Pfeiffer & Reddy, 1998)
- b) Young people at age 14 – 16 years are experiencing rapid personal development (Alsaker, 1995)
- c) The impact of this rapid development at this stage of adolescence on social and family functioning is significant (Greig, 2004)

What seems clear from the above is that during adolescence, young people are dealing with a large number of variables regarding their interactions with adults and peers in school, are experiencing a time of rapid physical and psychological growth, together with marked changes in their social development both outwith and in the home. Complex would seem an appropriate general description of this period in young people's lives.

The study of this time of development for young people is fraught with difficulties because of the large number of factors which could be associated with any observed or experienced change. This is discussed in more detail in Section 2.2, p.79. When researchers focus on this area, there is a tendency to split the differing aspects into separate areas of study to allow some focussed research to take place. Therefore aspects of adolescents in community functioning are studied by sociologists; in school functioning by educational psychologists; personal development by clinical psychologists; anti-social behaviour by forensic psychologists. Each group approaches their chosen field of study from differing theoretical viewpoints. It can be difficult therefore to view the development of adolescents and their response to change from a broad theoretical perspective, by simply integrating these differing perspectives.

Since the young people attending PAVE had already experienced significant change by virtue of their withdrawal from mainstream school and were subjected to a new set of expectations from different groups of adults in regularly changing settings (work, classroom, workshops), it would be difficult to select from the fluid group of variables affecting them, the ones which could be amenable to measurement without introducing significant distortion

into the study. For example, if any of the young people did successfully re-engage in PAVE, was it the teacher, workshop trainer, work experience employer, the new physical context, maturation, new peer group, or hidden factors such as changes in home life which were responsible? These factors suggested to the author that theories of change which addressed complex systems could be helpful in providing explanatory models as a background to any discussion of change in young people's experiences. These models could potentially be used as explanatory frameworks regarding any changes detected by the evaluation of the impact of PAVE on participants' life trajectories. The literature of complex change utilised both Complexity Theory and Chaos Theory as potentially useful models. Both of these models were developed in the physical sciences, in particular, Physics, Mathematics and latterly Biology (Goerner, 1995).

It was considered important to elucidate why these models could be usefully linked to the study of psychological change for young people. To illustrate that these models not only applied to change in physical systems, but also to the biology of people and the psychology of people, a detailed description of the links between:

- i) living systems
- ii) basic biological change
- iii) broader physiological change
- iv) psychological change

was undertaken to provide a sound theoretical framework within which Complexity Theory and Chaos Theory could be utilised to provide an explanatory basis for the findings of the study.

The area of Transition as an aspect of human development and transitional planning as a form of intervention in children and young people's lives is studied in some depth, particularly in relation to the models of the psychology of change outlined above.

Since the intervention focuses on groups of young people who have become disengaged in some manner from traditional schooling, the factors involved in this disengagement are also considered.

1.5 Aims, Hypothesis and Research Questions

Evaluation is a form of research enquiry which differs from pure research insofar as it has a pre-determined purpose (Cohen *et al.*, 2000). The nature of the tools used to carry out an evaluation need not be any different from general research methods. However, one of the main differences is the fact that continuation of the intervention or programme being evaluated is usually dependent to some extent on the findings of the evaluation. The number and variety of stakeholders can also be quite varied from participants through programme staff to fund holders. In this respect evaluation differs quite markedly from pure research in that continuation of the programme and consequently people's livelihoods may well be affected by the outcomes of the evaluation, giving certain stakeholders a vested interest in programme continuation or closure.

Methods of evaluation can also affect the programme itself. The methods of enquiry can be Summative, Formative or both (Robson, 2002). The present study utilised both. If the evaluation indicated a successful programme, programme staff could utilise the report for continued bid funding to support the programme (as was intended in the case of PAVE), and

the formative aspects could give feedback to the staff regarding the efficacy of some of the programme constituents and processes. However, an evaluation should at least involve systematic information collection of information about a wide range of aspects of the programme and should be of some utility (Patton, 1982). Since this study focuses on an evaluation of an intervention, the area of evaluation as a study tool and approaches to evaluation is looked at in more detail in Chapter 3, Section 3.2, Methodology, p.112.

With regard to the current evaluation, it was considered appropriate to explore - from whose perspective would 'success' be relevant and noted?

This required a clarification of who the main stakeholders were:

- European Fund holders
- Senior management in the Education Division
- Referrers
- PAVE staff
- Participants in the programme

The first two groups of stakeholders were not canvassed for their views on the success of the programme, largely because they were the intended recipients of the evaluation. PAVE staff regularly sent reports of attendance figures and student attainments to the European Social Fund (ESF) administrators to justify the grant received from them. However, as indicated above, this data was not always complete. Student attainments were variable in nature and were not gauged against any baseline to indicate added value. The method of data collection and style of reporting were rather narrow and aligned to the requirements of the ESF return.

This required, for example, a note of the number of hours each PAVE participant spent on activities such as:

- Technical/vocational skills
- Self employment skills
- Core skills
- Work experience
- Job search

This return was made to the Finance Department of Midlothian Council who, in turn, forwarded it to the Scottish Executive who administered this aspect of the ESF. No report was requested or sent to the Education Division of the council who supplied the core funding which employed the education staff on the programme.

It was partly this idiosyncratic collection of information by PAVE staff for the ESF and the relative lack of interest in PAVE's postulated success by the Education Division which triggered the need to have an external, systematic evaluation of the programme. Rather than seek the views of these stakeholders, it was hoped that the current evaluation would create sufficient interest in the programme for them to consider continuation of its funding. It was also hoped that lessons learned from the evaluation would lead to advice for the PAVE staff on their monitoring procedures and improve their quality control of the programme.

Senior managers in the Education Division of Midlothian Council, like school staff and other referrers, were happy that the students were being offered some educational activities outwith mainstream educational facilities at a modest cost to the council. Attendance figures

for young people at PAVE, as discussed in more detail in Chapter 4, Section 4.1.1, p.147, were regularly sent on to the young person's base school, but these were not always recorded, indicating a mixed level of interest in what happened to the young person once they were accepted onto the PAVE programme.

As indicated above, the realistic position for the referring agencies, such as schools, was a perceived success due to the physical move of the young person into the project and out of the school domain if application for a place was successful. Given that there was always a higher demand for places than availability, the referrers clearly were supportive of PAVE. However their apparent lack of interest in the programme outcomes for the participants resulted in this group not being asked for their views on the success of the programme.

The PAVE staff clearly had an investment in the success of the programme. Their jobs were dependent on continued funding of PAVE which meant that their views on its success would inevitably be partial. Discussion with them helped inform the plan for the evaluation, but they were not asked for their views on whether the programme was successful, or what may have made it successful. However, identifying the main features of the programme which could be utilised by the participants was an important aspect of setting the framework for the evaluation.

The broad aim of this study is to establish from the data available, whether PAVE contributed to a successful re-engagement of young people with some aspirations for a positive post-school experience relating to adult organised work, training or education.

By exploring the views of some of the young people on the programme, it was intended to further clarify what aspects of PAVE could be considered successful. How these aspects match the positive indicators in the research literature is explored.

The initial research questions for the current study were:

- A. Does PAVE successfully engage young people, previously disengaged from school, who have been referred to the programme?
- B. Are the young people who have experienced PAVE diverted from becoming part of the NEET statistics?
- C. If PAVE 'works', what particular features of the programme make it work?

These questions are further refined in Chapter 3 – Methods, p.110.

Chapter 2 Literature Review

This chapter examines the background to the study in relation to the following three subsections:

- 2.1 Educational Transition – a time of change
- 2.2 Adolescence - a time of significant personal change
- 2.3 Transition Projects - school to post-school

The study deals with the evaluation of an intervention, PAVE, which is focussed on a point of imminent and substantial change for the young people involved, that is, their move from a school to a post-school environment. By virtue of the intervention itself introducing further change into this time of transition, the theories and concepts associated with change for human beings is examined in some detail. By examining the nature of change for humans in detail, it is proposed that it is possible to re-conceptualise and inform the nature of change planning, using Chaos and Complexity Theory as theoretical models. Given that Chaos and Complexity theories were developed in the physical sciences, particularly physics and mathematics, the link from these to the psychology of human beings is discussed in some detail.

2.1 Educational Transition - a time of change.

There is considerable focus on transition as part of the experience of children and young people within educational systems and, most particularly, to their intended move beyond school. This focus has been formally recognised within legislation for children and young

people who may have Special Educational Needs or Additional Support Needs (DfES, 2001, section 9.51 onwards), (Scottish Executive, 2005f, chapter 5). Given this recognition, it is worth exploring precisely what is so important about the concept of Transition and the psychological value of the emphasis placed upon it. The dictionary definition indicates that transition is the '*Process of changing from one state or condition to another*' (Oxford, 2001). The central concepts are therefore change and the process of change. This process of change has been cited as being at the heart of psychology (Butz, 1997).

These basic ideas should not be surprising, since as living beings we are in a constant process of change. Our cells divide, multiply differentiate, are repaired, die and are replaced. We are also interacting with our environment at all times even when we sleep. What should therefore be so special about Educational Transition? Educational Transition is focussed on as one aspect of this change tending to refer to change which can have a significant impact on a person's life. This may refer to particular periods of individual development such as adolescence or of particular points of change associated with institutions such as the move from primary to secondary school. Some authors consider that transition is simply a part of life and relates to facing the challenges this brings to everyone as they grow (Humes, 2006).

Transition is a main focus of occupational psychology, either change within organisations or in the individual (Williams, 2005). Originally based on counselling psychology helping individuals deal with life crises such as bereavement, transition theories adapted to include strategies for change arising out of the challenges presented to individuals by

accommodating either positive or negative experiences and seeing these as opportunities for development (Williams, 2001).

What is the psychology associated with change? As indicated above, as humans we are in a constant state of change. Psychology is the study of people, the mind and behaviour and therefore includes all aspects of change, that is, internal processes, external interactions, development, social interactions (British Psychological Society, 2007; MedicineNet, 2007). Human psychology is particularly interested in how people deal with this change and the various processes associated with it (Butz, 1997). Change can be seen as positive or negative by the person experiencing it and, depending on the scale of the change, as comfortable or extremely threatening. In examining the concept of change, the study delineates a model of change as it applies to:

- 1) Life and living entities
- 2) Basic functioning at a biological level
- 3) Application of the model of change at a macro-physiological level
- 4) Linking the model to Complexity and Chaos Theory
- 5) Psychology and links to physiological systems
- 6) The application of Complexity and Chaos Theory to psychological change

2.1.1 A model of life and living entities

It can be useful in considering the basis for change in us as humans to consider appropriate models to study change from a psychological perspective. As living creatures, change is an inherent property of our biology. A consideration of what constitutes living as opposed to

non-living systems can illustrate the basic concepts associated with this change. Although it may seem obvious to be able to differentiate living from non-living, for example, a rock from a dog, when trying to define 'life', it can be surprisingly elusive. In attempting to reach an answer, it can be instructive to consider briefly what has been considered to be the essence of life and living things.

During the Scientific Revolution, life and living things were seen in mechanistic terms. The universe was simply a machine governed by mathematical laws and principles of physics. By analysing living things into their smallest components, it was thought possible to explain everything. This mechanistic view was reinforced by the discovery of modern chemistry which 'explained' some of the previously hidden processes in living things, such as digestion and respiration. Chemistry, in this framework, was simply a version of physics which accounted for detailed interactions between certain atoms and molecules, and it was believed that physics and chemistry between them could explain biology.

The above attempts to explain that 'life' or its connection to reality, did not account fully for the dynamic aspect of life, that is, that it is always changing in some way. This was conceived as a 'moving order' by Goethe. Kant also introduced the concept that perceptions were constructed by our mind acting upon observations by the senses (Caygill, 1995); science invents the language with which to organise observations. Living organisms, rather than a collection of parts were self-reproducing, self-organising wholes (Ross, 2002). Later developments in biology and in particular, cell biology, helped establish that a simple mechanistic view of life was inadequate. There was no obvious process derived from physics

or chemistry which could account for the ability of cells, not only to divide in a series of multiplications, but, in particular, their ability to divide into cells which had very specific and differing functions. By looking in more detail at the basis of our functioning as living beings in terms of cell biology, it is possible to derive more appropriate metaphors as to how we deal with change. It is suggested that change is part of what we are and who we are in its most fundamental aspect and life is an emergent property of these biological changes (Kauffman, 1996).

What differentiates life from non-life? What is it that makes cells living entities as distinct from the molecules which make up rocks and sand? Several researchers approached this question from a variety of disciplines. The study of physical and chemical systems showed that it was possible to have inert matter behave in 'lifelike' ways. The most notable were Benard cells which form when a thin layer of liquid is heated uniformly from below. At a certain critical point, the convection movement of the liquid transforms into a complex stable pattern of hexagonal cells. This is a characteristic known as self-organisation and was thought to be more an aspect of living things (Capra, 1997).

Other examples of this self-organising principle can be demonstrated in chemical reactions such as the Belousov-Zhabotinsky reaction where the interacting chemicals form periodic oscillations in wave-like formations changing colour at regular intervals (chemical clocks) (Thuan, 2001). It was noted that these types of self-organising behaviours in non-organic systems occurred in what was termed *dissipative structures* when they were 'pushed' far-from-equilibrium, that is, moved away from any stable state (Prigogine & Stengers, 1984).

These systems were characterised by having an energy flow through them. This new concept of dissipative structures was shown to occur in open systems far-from-equilibrium, and rather than lead to increased disorder as previously shown in the thermodynamics of closed systems (an increase in entropy), the energy input to these open systems could lead to new forms of order and organisation within the system (a decrease in entropy). This new conception set 'life' and 'living entities' in a completely separate frame from the established laws of physics.

These systems in many ways model what is happening in living cells. A cell takes in energy from its environment, utilises it to create new systems and structures within the body of the cell and thus maintains its stability in a far-from-equilibrium state. When a cell is in equilibrium with its immediate environment it is dead, there is no energy flow through it.

Capra describes the contribution of further theorists to the debate of living versus non-living. Both in the study of lasers by Haken as self-organising dissipative structures and the work of Eigen who studied hypercycles in enzymes and demonstrated remarkably stable structures which not only self organised, but were able to self-replicate, Capra lists the features of these life-like properties in non-living systems:

- Self organising
- Dissipative structure
- Far-from-equilibrium (energy flow)
- Utilise positive feedback loops
- Instabilities leading to new forms of organisation

- Evolutionary phenomena in non-biological systems (Capra, 1997).

What else is needed for 'life'?

As further discussed by Capra, the work by Maturana and Varela helped clarify this question (Capra, 1997). They indicated that a living system must have the property of *autopoiesis*, or self-making. This can only occur in a system which utilises a boundary between itself and its environment where the boundary is an active component of the system itself, but chemically distinct from it. The boundary acts as an active filter monitoring the inflow and outflow of molecules through it. The entire structure continually renews and regenerates itself from this energy flow across the boundary utilising its own internal structures, which are in turn renewed.

2.1.2 Model functioning at a biological level

In a cell, this process of constant renewal is the cell's metabolism. The comparison is drawn with a virus, which is non-living. Although possessing its own DNA and RNA, a virus has no metabolism and cannot regenerate except by invading a host cell and utilising the host cell's metabolism to reproduce and multiply (Capra, 2003). Two aspects of the cell which help define its essential properties are its structure and its pattern of organisation. The structure is the physical embodiment of the pattern of organisation. However to complete Capra's definition of life, the third criterion is process (Capra, 1997).

It is the continual embodiment of the pattern of organisation which defines this process. In a cell, there is a continual intake of energy (nutrients) into the cell via the cell wall (boundary)

and the pattern of organisation between cell components (nucleus, ribosomes, mitochondria etc.) lays out the basic parameters within which the cell processes (metabolism) can take place. Utilising this pattern of organisation the cell continually re-embodies itself through the process of its own metabolism. The blueprint for this process to continue its work is held in the nucleus as the DNA (the cell's 'history'). This network of interactions is what defines 'life' for Capra (1997).

When seen as an autopoietic network, the cell creates its own boundary between it and its environment defining it as a closed system organisationally with the boundary as an essential active part of the network. However, as indicated above, the network is also open with respect to the energy flow through it (a dissipative structure). The system is therefore organisationally closed, but structurally open.

The power of this model of 'life' can apply at a variety of levels. If the model is applied beyond the cellular level to us as humans, there is a parallel with our interaction with our environment. There is a flow of information through our boundary at either the physical/sensory level or at the psychological/social level. The active nature of the cell wall is mirrored by our own perceptual systems. We are not a simple, passive set of receptors, we actively attenuate and modify physical stimuli from our environment before acting on it (Cohen & Stewart, 1995). The modified information is utilised within our bodily feedback loops, for example, hormonal and neural systems and accommodated as growth or development. This ability of our 'cellular wall' to interact with the environment and attenuate it takes us beyond a simplistic notion of 'humans as sponges', absorbing

information in an indiscriminate manner. This arrangement has an adaptive purpose. This is referred to later in the discussion of post-traumatic stress disorder (PTSD), pp. 69 - 71.

These autopoietic networks although following a pattern of organisation (such as indicated by the DNA in a cell) are not fixed systems. The pattern is a pattern of production processes which also have the ability to adapt as they renew themselves. Changes in the environment are detected by the boundary and the network can respond accordingly and continue the task of self-maintenance. This interaction with the environment is termed *structural coupling* and is structurally open. Stimuli from the environment trigger the changes in the network but do not define the change, these are specified by the autopoietic network through its processes of self-organisation (Capra, 1997). These changes are not just adaptations to the processes in the network. Structural coupling also involves structural changes to the network, involving, for example, new connections between constituent parts of the structure.

This theory of autopoietic networks as the basis for a definition of 'life', is taken further by Maturana and Varela to a definition of Cognition as the basis for life. This is termed the Santiago Theory of Cognition as discussed in Capra, (1997). The fact that a cell acts in a purposive manner in its interactions with its environment led Maturana and Varela to consider that an autopoietic network did 'think' in these terms. It responded to information detected in its immediate environment. Rather than the often quoted Descartes - *I think, therefore I am* - they turned this around to propose that - *I am, therefore I think* - is more representative of how living entities are defined. Cognition therefore becomes a defining property of life.

This view of cognition has not gone unchallenged. Taking a term which could be ascribed a common currency of meaning in relation to higher animals and extrapolating it to single cells such as amoeba was considered confusing (Martin, 2003). However, it may well be that the general understanding of the term Cognition was in itself limiting. If it can be usefully broadened to include a fundamental concept such as 'life' and add meaning to it as applied to autopoiesis, then it has value. In this view 'life' is seen as a process not an object.

2.1.3 Application of the model of change at a macro-physiological level

A very particular application of this theory has been applied to the human immune system. The immune system can be viewed as a complex network which has adapted to respond in very particular ways to the invasion of 'foreign' material which may threaten the viability of the host system. The immune system, however, does not simply bind white blood cells to foreign bodies and neutralise them. Rather, it is a communicative network which can bind to itself, as well as other bodily cells, without destroying them (Goertzel, 1995). When there is an invasion of the host by foreign cells, the white cells do not simply attack these foreign cells, but regulate them. If there is a massive invasion at one site (for example, a bee sting) there is a big response (evidenced by swelling, reddening etc.), but smaller invasions are tolerated and regulated (for example, viruses in the throat area, bacteria in the gut). It appears that to engage in this regulatory function, the immune network requires to utilise: recognition; communication; regulation of response; feedback loops. Cognition seems an appropriate term to apply to this essential network (Capra, 2002).

How is this related to the concept of change?

A fundamental aspect of 'life', as indicated above, is development of the network. The structural coupling with the environment results in structural changes within the network which, in turn, become the history of the network's development. Since the outcome of each new structural coupling with the environment will be determined by the structure and pattern of organisation of the organism itself, the behaviour of the organism is determined, but self-determined rather than determined only by the external environment or the network's history.

2.1.4 Linking the model to Complexity and Chaos Theory

A significant aspect of autopoietic systems is their response to feedback, both negative feedback in terms of stabilising the system and positive feedback in relation to moving it far-from-equilibrium. The organism can then exist in a state of dynamic stability. It has been demonstrated that physical systems in this far-from-equilibrium state are prone to significant changes in their functioning (Goerner, 1995).

An important feature of linear systems is that small changes lead to small effects and large changes lead to large effects. In non-linear systems, small changes can lead to very large effects by virtue of the self-reinforcing nature of the feedback into the system. This is known as 'iteration', and involves feedback acting on a part of the system which in turn produces further feedback into the system and this process keeps repeating (a positive feedback loop).

It has been shown that this process applies widely in nature and is the basis for the 'Butterfly Effect' referred to in the development of weather systems. This was first referred to by Edward Lorenz when he discovered that an apparently minor change to a model of a weather system's starting conditions resulted in behaviour which was radically different from that produced by a very similar starting point in the same model. A small change in initial conditions led to large effects later in the development of the system (Thuan, 2001).

It has taken until the latter part of the 20th century to establish a suitable mathematics to model these non-linear systems (Cohen & Stewart, 1995). This mathematics essentially looks at simple rules which can generate highly complex outcomes and considers what minor changes to initial conditions can do in relation to behaviours generated at a subsequent point in the system's development. One of the most famous applications of these principles is the Mandelbrot set which has shown that from some simple initial rules a highly complex object of self-similar detail can be produced, a fractal object (Gleick, 1998).

Some scientists have made a particular study of the information and rules which can generate complex outcomes (Wolfram, 2002). By detailed study of cellular automata and the patterns produced under certain rule conditions, Wolfram has shown that it is not only possible to generate a whole series of shapes similar to real snowflakes from a simple rule, but that a new form of science can be postulated which is independent of previous limiting mathematical axioms. Wolfram contends that most observed phenomena in mathematics, biology, psychology and other disciplines are amenable to being described by some simple rules.

Complexity is an expected outcome of these rules but mainly as emergent forms rather than due to any underlying complexity in the system itself. In biology Wolfram points out that early life forms had a level of complexity not particularly different from current species. Although there has been quite marked evolution of species, with a wide variety of complexity in their life forms, the underlying rule system (DNA) has not evolved in a similar manner. This can be illustrated by the fact that although we are very different from mice, we share 99% of our genes with them (Dolan, 2002). Wolfram makes some quite extraordinary claims for his 'new science' but further study may recognise the validity of some of these claims.

What this new approach illustrates is the need for a re-balancing of physical science's view based on the reductionist models and constrained by the mathematical tools invented to analyse these problems in a linear fashion. The most significant of these tools has been the development of calculus. Derived as an essential tool by Newton and Leibniz and enabling many profound insights into the functioning of the physical world, it had limited scope as an approach to helping describe universal laws (Stewart, 1996). However the success of calculus has infused science (both physical and social) with a view of the world as deterministic, that is, given sufficient information about the starting point of any system, then the future development of the system can be derived. This was the rather extreme view taken by the mathematician Simon Laplace and became known as classical determinism (as discussed in (Stewart, 1989)). The misplaced faith in this view was illustrated by the developments in thermodynamics and quantum dynamics which required probabilistic approaches to make sense of observed phenomena in gases, fluids and elementary particles.

Theories such as wave/particle duality where a photon of light appears to decide whether it will behave as a particle or a wave dependent on its immediate environment and the uncertainty principle of Heisenberg regarding the inability to define clearly both the position and momentum of a sub-atomic particle illustrate the non-deterministic nature of the physical world. (Capra, 1997; Cohen & Stewart, 1995).

As methodologies, these physical science derivatives, particularly classical science, distort studies of nature by neglecting or specifically dismissing interactions in systems or treating them as error (Goerner, 1995). Classical science relies on this approach to make the mathematics of its equations solvable. Although it is appropriate to try to make sense of our environment by deducing trends and quantify these into simple rules where possible, this must not be to the total exclusion of complexity as a subject worthy of study in its own right (Stewart & Cohen, 1997). Rather than deny the advantages of treating physical phenomena in a reductionist way, there is an advantage to taking both a top down (holistic) and a bottom up (reductionist) approach.

This is well illustrated by the success of the physical sciences in the development of modern technology. To help bridge these two approaches the concept of *emergent phenomena* has particular power, that is, when a system produces a behaviour which transcends any of the properties of its constituent parts (Cohen & Stewart, 1995; Kauffman, 1996). This is not simply an abstract concept, but can be observed in the real world. The development of the living cell from groups of bacteria is just such an emergent phenomena. It appears that bacteria at some point 'discovered' that acting in the way that a cell does, is an efficient

method of developing. The focus for the change was self-organisation (Stewart & Cohen, 1997).

This theory of self-organisation indicates that significant change takes place at points of disequilibrium., that is, where a small change in a system can lead to a build up of energy which in turn leads to a reorganisation of the system usually with a new arrangement in a new state of equilibrium (Goerner, 1995). In the natural world, a striking example of self-organisation takes place with slime mould at a particular stage in its development. Slime mould is a single cell organism which is a solitary feeder until the food supply in its immediate environment becomes depleted. At this stage the single cells group together into a slug like mass and move in concert across the forest floor until they encounter a new food supply. At this stage the aggregate 'body' of single cells produces a plant like stalk with a head which bursts open to distribute spores of single cells across the new area and the life cycle continues (Perna & Masterpasqua, 1998).

Self-organisation presupposes that within a system or network there are some rules by which systems develop. The study of such rules is the science and mathematics of Complexity and Chaos. Complexity Theory looks at how simple outcomes can be generated from complex starting points, whereas, Chaos Theory considers how simple starting points can lead to complex outcomes (MacGill, 2007). They are therefore very closely linked.

The term 'chaos' is not favoured by all researchers due to the term having a pejorative meaning which can confuse the topic being discussed – 'complete disorder and confusion' (Oxford, 2001).

The study of chaos tends to take place at particular points in the development of a complex system and involves the search for the underlying order in that complex system. One example is a *bifurcation point* which occurs where a build up of energy causes the system to take one of two new states, neither of which is predictable from the initial state of the system (Prigogine & Stengers, 1984). The study of complexity is essentially the study of the interactions which take place in a system or network. Although the details will vary for specific systems, understanding the simple rules which can govern non-linear dynamic systems is the goal of the study of chaos.

Some mathematicians prefer to refer to Dynamical Systems Theory or the study of dynamics rather than complexity. Their view is guided by the historical common language in mathematics which they consider accounts for sufficient concepts without introducing new terminology (Abraham, 1995a). However, it is also possible to use the metaphors inherent in Dynamical Systems Theory as explanatory models, without requiring the mathematical calculations utilised in Dynamics (Abraham, 1995b). In utilising the approach in a metaphorical, diagrammatic manner, the difficult aspect is identifying clearly what the variables are which characterise the system under study.

The most significant aspect of the mathematics applied to the study of Chaos and Complexity is the move towards geometrical approaches and diagrammatic explanatory tools. These were first heralded by Henri Poincarre, a French mathematician, at the end of the 19th century who introduced the ideas of topological geometry – the study of surfaces to solve problems previously considered intractable using algebraic methods, in particular, the

idea that one could predict the motion of three bodies which collided simultaneously. Using topological diagrams, Poincarre showed that it was impossible to predict a clear outcome (Stewart, 1996).

This was the first indication in the sciences that there was such a concept as 'chaos' (although not known as such then). By showing that the smallest variations in initial conditions of the three bodies resulted in a whole range of solutions, none of which overlapped, Poincarre illustrated the complexity of dynamical systems and the use of topology as an essential tool to study them, as discussed in (Butz, 1997). These methods were revisited later in the 20th century by Lorenz when he discovered the dependence of weather systems on initial conditions.

2.1.5 Psychology and links to physiological systems

What relevance does this have for Psychology?

It is clear that the study of interactions of animals with their environment is unlikely to be a simple linear problem. If reference is made only to human psychology, then it is clear that the interactions which take place within our embodied environment are complex by any definition of the word. At the level of physiology, the interplay of chemical and electrical systems which make up our being is not linear, and the further complexity of our interaction with our external environment complicates this further. A simple illustration of our responses to temperature variation (shivering, sweating etc.) indicates that we rely on a variety of feedback mechanisms within our bodies to try to regulate a steady state for our organs to function efficiently.

A very particular application of complexity to our own physiology has been the study of the heart's rhythms (Gleick, 1998). It was recognised that the heart was a dynamic system which was subject to a variety of stimuli to produce a steady pulse which caused the various parts of the heart muscle to contract simultaneously, thereby producing a coherent pumping action. However, heart specialists had been aware for many years that fibrillation of the heart (a disruption to this coherent contraction) could occur in a heart which at later autopsy showed no sign of physical damage. This puzzle became more understandable when multiple electrodes were applied to monitor the beat of healthy hearts to discover that there was a wave of electrical impulses which flowed over the heart surface during a healthy beat. However, it was also detected that there could be abnormalities in the wave which could cause a small 're-entry' wave which then triggered some of the heart muscle cells to contract out of sequence. This disruption of the smooth heart wave is not considered indicative of a heart problem, rather, it is the sign of a healthy heart.

Studies from heart transplant patients compared to healthy volunteers indicate that a newly transplanted heart has a very narrow tolerance limit of operation and beats in a highly stable manner compared with normal volunteers. Monitored over a number of years, it has been shown that the transplanted heart 'learns' to be more adaptive and utilises a wider range of rhythms as part of its normal beat (Kresh et al., 2000). This ability of the heart to operate as a complex adaptive system is understood in terms of complexity theory rather than as a deterministic large muscle subject to a precise metronomic beat.

' The heart is an organ endowed with adaptive plasticity (genotypic and/or phenotypic memory) and the capacity to assimilate (fitness capacity) within the host and, in

the process, modify the environment determining the fate of the body system as a whole. The expectation is that the paradigm of complexity will provide a nonreductionist framework for understanding the principles by which 'emergent properties' and functional order of self-organizing systems ultimately achieve (homeo)dynamic stability. In such a construct, the integrative action of the living organism cannot be gotten from its concatenated fractions but is evolved 'relationally, i.e. it emanates from emergent internal requirements of the parts.' (Izrailtyan, 1998, p.726).

A general finding in relation to complex systems theory is that small perturbations to a linear system disrupt that system and continue to do so, whereas small perturbations to a non-linear dynamic system can lead to a restoration of more stable states. This counterintuitive finding makes sense of the way a fibrillating heart is treated. For many years, it has been known that applying a large jolt of direct current to a fibrillating heart can restore it to a healthy rhythm. Why this method works is now becoming understood through the study of complexity and is leading to better design of defibrillating machines (Gleick, 1998).

Further evidence of the value of complexity as an explanatory tool is in relation to schizophrenia. It has been shown that schizophrenics and affective disordered patients have impaired eye movements compared to normal controls and this can be used to help diagnose schizophrenia (in particular saccadic impairment) (Kathmann et al., 2003). A model for this unusual attribute was described by Huberman in 1986 using a computer model based on a simple mechanical analogue moving through different states of smooth tracking to

disordered, chaotic movement indistinguishable from the eye movement reported in the psychiatric literature (Gleick, 1998).

Of further relevance to psychology has been the study of dreaming and rapid eye movement (REM) sleep. It has been shown that a model for dreaming behaviour matches well with the view that the reduced external stimulation during sleeping leads to self-stimulation of the brain from the lower limbic system. This internal input causes the brain to self-organise and can account for the unusual features of dreaming associated with a reduced cortical input. The interpretation that the brain appears to pursue a narrative process in dreams during this self-stimulatory phase indicates the level of order arising from this self-organisation.

During REM sleep, the brain is as active as it is during the waking state, but all of the input is from an internal focus, particularly memories and feelings, as opposed to the normal focus on external stimuli in the waking state. It has also been shown that the processes of interconnectedness of the sleeping brain are different from that available in the waking state. In particular the dorsolateral prefrontal cortex is much less active and since this area is associated with short term memory, face and object recognition, it could account for the bizarre nature of some dream content such as two people merging into one and sharing combined features (Kahn *et al.*, 2002). The stimuli for this self-organising behaviour to occur have been shown to involve the bombardment of the occipital region with pontine-geniculate-occipital spikes. It is conjectured that these pulses of stimulation involve the brain settling into ordered states (attractors) which then feed back to increase the regularity of the spikes further into the REM phase. The fact that these spiked pulses continue during REM

sleep could account for the sudden disjointedness which is reported to occur in the narrative process of dreams (Kahn *et al.*, 2002).

Conversely, studies of the sleeping brain serve to highlight the complexity of the waking brain and help illustrate the value of focussing on understanding its inherent nature as a self-organising system of complex processes, that is, an autopoietic system. EEG patterns indicate a variety of wave-forms being utilised as part of the self-regulatory function of the brain. These are combined in the brain and lead to stochastic activities of a chaotic nature. This is illustrated by the formation of strange attractors – areas of ordered activity arising from the self-organisation (discussed below, p. 60). The waking brain has been characterised as being in a condition of self-organised criticality, alert to the slightest perturbation in the environment, for example, the tiny amount of energy associated with retinal activation (Teran, 2002).

This can be seen as highly adaptive:

‘...selection achieves and maintains complex systems poised on the boundary or edge between order and chaos. These systems are best able to coordinate complex tasks and evolve in a complex environment’ (Kauffman, 1993)

2.1.6 The application of Complexity and Chaos Theory to psychological change

Applying these concepts of Complexity to psychology should not be in any way surprising. When we move beyond the consideration of the individual and their internal functioning we

are immediately dealing with a non-linear world. A conversation between two people illustrates very clearly the interdependence of each on the stimulus from the other and the effect on each of this feedback for shaping the future dialogue (Pickering, 2006). What the study of complexity and chaos brings to a psychology of interactions is a new language of description, pattern, explanation, modelling and quantifiable checking of theories.

It has also been proposed that utilising the concepts of complexity as applied to the study of neural networks leads to the dissolution of apparent schisms in schools of thought in psychology (Tryon, 1995). These schisms such as nature/nurture; language learning – behavioural/innate; ideographic/nomothetic etc. find that neural networks combine the features of process and structure in a complex model which accommodates both. These approaches are not replacing traditional methods of enquiry, but enhancing them. Models are open to both top down and bottom up views (Goerner, 1995). As indicated above, p. 53, it is not always necessary to use complex aspects of algebraic mathematics, such as differential equations, to employ these methods. Topological geometry has considerable power as an explanatory tool (Stewart, 1996).

An early example of using a geometric approach to clarifying complex issues was used by Zeeman in the early '1970s'. At that time the development of complexity theory had evolved as Catastrophe Theory as espoused by another French mathematician, Rene Thom. Using diagrams which illustrated the development of anorexia nervosa, Zeeman was able to clarify the underlying factors which illustrated how phase 1 (starvation and food avoidance) and phase 2 (gorging and purging) were linked, and also how the condition was locked in a self

perpetuating loop (hysteresis). By theorising how the loop could be broken using the cusp catastrophe diagram, J. Hevesi, a therapist working with Zeeman, was able to adjust his input to the clients to help break out of the hysteresis loop (Zeeman, 1980).

Clarity can be gained by the geometric approaches of, for example, phase space diagrams. Phase space diagrams provide a method for transforming numbers and equations into pictures, capturing the dynamic aspect of the development of a system (Gleick, 1998). These diagrams have been utilised to clarify dynamics problems since the early 20th century and can add clarity to the progress of a system as it moves through time. It is in viewing these phase portraits of a system that the concept of attractors in chaos theory becomes clear. The tendency of some systems to head towards a particular state in their development can readily be seen graphically (Abraham, 1995a). These attractors are categorised as

- Point – associated with linear, deterministic systems
- Periodic - the system repeatedly cycles around the same behaviour (anorexia nervosa)
- Chaotic (or strange) - although unpredictable, the system behaviour can be mapped on phase space and is considered bounded by the attractor

Stable systems over time will settle to one of these three states. However, unstable systems can have more than one attractor and the system can move or evolve from one set of attractors to another. These changes can lead to sudden dramatic shifts in the systems behaviour at a bifurcation point (previously called ‘catastrophes’ in Thom’s theory above, p.59) where there is a split in possible new states for the system. As indicated, despite the term chaotic, there is an underlying order to the system and it is by studying the phase

portrait of the system (the representation of all the phase space changes) that predictions and hypotheses about future behaviour can be mapped. When a system is moving closer to a bifurcation point there is the possibility that a new set of behaviours will occur. The system can be driven towards this point by input of more 'energy'. A chaotic attractor can be very complex. A measure of this complexity would be given by the fractal dimension of the attractor.

An example of the use of these concepts is the study of the interactions which took place in a therapeutic group (Burlingame et al., 1995). The authors used a classification system, the Hill Interaction Matrix (HIM), which allowed categorisation of the therapeutic quality of the group interaction to be rated on an interval scale across a time-limited series of group meetings. By analysing the degree of complexity and therapeutic quality of the interactions as a time series with both non-linear mathematics and linear approaches, they were able to show:

- The calculated fractal dimension did indicate a complex non-linear order across the life of the group with the density grouping of data points also indicating the presence of a chaotic attractor;
- The relative fractal dimension was a good measure of the complexity of the group interaction.

By plotting these values against the group meeting number (first to last) they found a clear split in the complexity of interaction from early stage group meetings to later stage group meetings, giving an indication of increased group cohesion. When a complimentary developmental analysis was carried out on the data (unrelated to chaos theory), a significant

linear trend was established, indicating an increase in the therapeutic quality of the group. By plotting the data in phase space, the data seemed to reveal the strange attractor referred to earlier and was suggestive of the group striving towards more satisfactory states of interaction during the process, before settling to the latter stages of complex interactions of higher therapeutic value.

The authors concluded:

'the group gradually developed a stable, yet complex, non-linear pattern of interaction that was related not only to time in group but also to the therapeutic quality of participant interactions' ((Burlingame *et al.*, 1995), p. 102)

As they indicated, this is consistent with what could be expected in a therapeutic group development, that the participants would initially exhibit low risk but more varied interactions and develop to later high therapeutic more complex interactions as the group became a more secure environment for the participants. The authors do exhibit some caution over the reliability of the HIM scores. The scores are weighted and there is some doubt as to whether the values are truly interval scale or more realistically nominal values. This could have a distorting effect on some of the data transformations used in the analysis, raising some doubt as to the conclusions drawn from the statistical findings. Despite this, many of their conclusions are drawn from the topographical nature of the final plots. When compared to the equivalent linear analysis of the same data, it is of note that the detail of interactional information gained in the dynamical analysis illustrates the paucity of information derived from the linear analysis, which discarded this level of detail. In relation to the utility of the

approach, they indicate that a lot of training in group interactions involves the recognition of patterns of interaction during the group process. This form of analysis helps clarify trends in the group process and could be an effective means of helping make therapeutic decisions about interventions as to the development of the group over time.

A similar set of findings in three separate studies (Tschacher & Scheier, 1998) looked at the interactions of:

- a) schizophrenia in a hospitalised group
- b) social synchronisation of a therapeutic dyad
- c) tendency towards increased order in a therapeutic group

Study (a) showed clear indications in more than half of the patients that schizophrenia was an expression of low dimensional chaos. The authors compared the randomness inherent in predicting future psychotic episodes with observed psychotic periods against a statistically valid library of past episodes. The observed episodes followed a time series which contained non-random serial structure and was non-linear. The authors also estimated the divergence of neighbouring trajectories in phase space and found for the same group of patients a clear indicator of deterministic chaos.

In study (b) Tschacher and Scheier found very little evidence of interpersonal synchronisation despite employing a large number of physiological and behavioural indicators. They mapped out a straightforward method for testing the synchronisation. Tschacher and Scheier, however, do not seem aware of the potential distorting effect of the

instructions given to the therapist in the interaction. The instructions reinforced the power difference and controlling aspect of the therapist in the interaction which could account for the lack of synchrony between the two 'subjects'.

The third study indicated clear evidence (as in Burlingame *et. al.* 1995), above) of a move towards coherence within a therapeutic group. A factor analysis of observations showed a statistically significant reduction in degrees of freedom of the data over time, that is, a strong tendency towards self-organisation. The authors concluded that they find growing evidence of non-linear dynamics in the fields of psychology and psychiatry. Their methodologies were sound in respect of the experimental design and, in particular, the statistical analysis of findings.

In relating the study of complexity theory to human consciousness, it is possible to analyse the models used traditionally in psychology and note some of their shortcomings, in particular, a focus on the tendency to emphasise nomothetic approaches (groups and norms) at the expense of study of the individual (ideographic approaches) (Combs, 1995). Whereas the former approach looks at fitting straight lines to trends in data and ignoring some of the issues to do with the spread, treating increase in scatter as error, the latter, ideographic approaches, looks at spread in the data, accepts the complexity of interactions and utilises chaotic analysis to reveal important information. The linear approaches seem stuck in classical physics models, not taking into account the fact that physics progressed beyond these models at the start of the 20th century with the development of quantum theory.

It can be more useful to view humans as self organising systems which move towards greater complexity by taking in 'ordered energy' from the environment and thereby create an increase in information within their system (Goerner, 1995). There is a clear parallel with Piagetian developmental theories where schemata are viewed as mental processes which are self-sustaining by supporting each other, developing coherence (Mahoney & Moes, 1998) (also compare with the discussion of cell metabolism above, p.44) .

Experimental data on mood has indicated the presence of a low dimensional chaotic attractor (Combs, 1995). When consciousness is viewed as a combination of systems of these low dimensional attractors reflecting cognitions, perceptions, sense of self etc. these attractors, combining in our brains, can be seen as higher dimensional chaotic attractors exhibiting bifurcations dependent on the control parameters of external and internal information. One study gives a useful list of 13 types of psychological interactions which may have exhibited bifurcations in psychological phase space including 'Aha!' experiences; falling in love; developing a phobia ; developing amnesia (Gilgen, 1995).

Gilgen suggests that there could be a significant piece of work involved in identifying the specific segments of our routines before and after a supposed bifurcation event to meet the criteria of:

1. A dramatic shift in the phase portrait of our psychological state, caused by
2. A change in the critical value of a control parameter responsible for the bifurcation

Although identifying some of the possible ways of representing the psychological domain to allow determination of a model, unlike Zeeman, Gilgen's study unfortunately does not give a practical exemplar of the model.

The themes of Complexity Theory can be applied to learning in an academic setting (Torre, 1995). Using a triadic theory of competency based on three domains of intellectual, emotional and pragmatic-contextual, Torre demonstrates a chaotic process which can be analysed using complexity theory. By proposing an equation which models these three domains, the limit of these complex functions produces a fractal set which exhibits self-similarity on all scales. In other words, no matter the level of detail which the model maps, the same processes apply. The triadic model described by Torre gives rise to a self-similar replicating geometrical figure, the branches of which he simply labels as intellectual, emotional and pragmatic-contextual. There is no explicit derivation of these labels from the model. There is no mention, for example, of the social dimension of learning.

Using this model, it is possible to demonstrate that when the three domains interact, sometimes with two domains antagonistic and the third mediating, the model realistically describes and predicts the behaviour of 'failing' students. By proposing three aspects to the functioning of each domain a 3x3, (9) task model of problem solving can be developed. However rather than consider this to be a linear 9 step heuristic, the 9 tasks can be considered as regions in an interactive phase space and the tasks performed in any appropriate order. The model diagram illustrates the concept of iteration which can take place during problem solving, by utilising the self-similarity of the fractal nature of the

trajectory in phase space. This is precisely the approach to modelling psychological intervention recently proposed by Gameson using a constructionist approach to link psychological theory to practice (Gameson *et al.*, 2003, 2005). Using this latter model, educational psychologists are encouraged as a fundamental part of their work with various client groups to address the theory base from which they are working on a systematic and iterative manner during interventions.

Torre utilised his model to intervene with university students who were in a failing situation (Torre, 1995). It was hypothesised that the students were subject to an imbalance of pressures across the three domains and that this led to high dropout rates. The approach described trying to move the students away from their current high dimensional chaotic state typified by turbulent behaviour exhibiting simple attractors of a periodic nature, that is, binge drinking and partying, and fixed point attractors, that is, doing no educational work.

Chaos theory would suggest that this behavioural set could be most easily changed by interventions during transitions (bifurcations) between strong attractors. In other words, encourage the apparently paradoxical situation of inducing more tension into the system (the students) to cause a bifurcation toward more adaptive educational attractors. Caution is needed to make sure that the instability at the bifurcation is not too great as to preclude a move toward a more functional attractor. The author illustrates an intervention with groups of students to this end. He focused on:

- mediating the emotional needs of the students
- encouraging group working (which is inherently chaotic)

- putting the trust in the students to problem solve
- trusting that the solution is in the problem (as in solution oriented thinking)
- use of feedback, feedforward (trajectory planning) and self-regulation. (Torre, 1995)

Torre indicates that there was an increase in student problem solving effectiveness beyond that observed at an earlier part of the course. Although an isolated example, and not validated externally, this application of complexity theory to the modelling of the students' behaviours and the outcome of the intervention indicate a high degree of consistency.

However, as indicated by bullet point 2 above, Torre deliberately introduced a social dimension to the intervention in the form of group working. As indicated above, his model does not fully account for a social dimension to learning, except possibly in a loose way, in the contextual aspect of the pragmatic-contextual dimension.

A particularly detailed look at how the metaphors of complexity theory apply to therapeutic work in psychology has also been delineated (Butz, 1997). To illustrate, Butz draws on a study of the predictors of marital dissolution (Gottman & Levenson, 1992). Positive feedback into the marital relationship, characterised by a high number of statements of positive affect by the couple during therapy, led to new adaptive forms of relating - these were considered low-risk couples. Where there were a large number of statements of negative affect these characterised high-risk couples. These couples appeared to spiral down to a negative plateau in their relationship with little propensity for shifts to new more functional relating. The study findings indicated that low-risk couples were in a far-from-equilibrium state of relating where the positive affect was feeding energy into the system,

preparing the way for a bifurcation to a new form of behaviour. In contrast, high-risk couples were stuck in a low level state with no energy being fed into their relating system and the marriage eventually drifted into dissolution.

A hermeneutic approach was used to explore the relationship between Chaos Theory, Neurobiology/Post Traumatic Stress Disorder (PTSD) and Psychology (Warfel, 2007).

Warfel criticised some approaches which made a conceptual leap from chaos theory directly to psychology as being 'too metaphorical'. Utilising a data analysis programme (Atlas.ti) she chose ten key documents in the relevant fields of study and looked at the degree of relationship between the key concepts in each. The analysis produced four main connections between the three aspects of Chaos Theory, Neurobiology/PTSD and Psychology:

1. Bifurcations
2. Fractals
3. Limit cycle attractors
4. Periodic attractors

By displaying the relationships on a tabular format, the author clarified the links between the three aspects centred on each of the above headings. For example, under Bifurcations she suggests:

'As the intensity and physical proximity to the stressor increases, the parameters of the original attractor are changed and a new attractor is formed. Bifurcation may lead to changed psychological processes and externalised behaviors'

For Fractals:

'Stress disrupts the vertical integration of fractal firing patterns associated with REM. Fewer numbers of spontaneous episodes have been observed under stressful conditions. Perhaps this lack of vertical integration of fractal patterns contributes to the fragmentation of the psyche that we see in PTSD'

For Limit Cycle Attractors:

'The locus coeruleus helps to regulate attention, arousal and sleep-wake cycles and affects learning, memory, anxiety, pain, mood and brain metabolism. In PTSD, the locus coeruleus and its accompanying systems are changed from a chaotic attractor into a limit cycle attractor. The result is constricted behavior' (Warfel, 2007, pp.8 – 9).

Similarly for a Periodic Attractor, the disruption to the locus coeruleus by traumatic stress could cause a change from a chaotic to a periodic attractor which may account for the persistent re-experiencing of traumatic events by those suffering from PTSD. These conclusions are consistent with the work of others on complex PTSD where successful treatment has centred around re-enactment of the trauma within the therapy (re-visit the attractor safely), build coping skills (add energy into the system) and encourage formation of loose associations (help move away from the old attractor) (Kolk, 2001).

This combined approach is consistent with the concepts of chaos theory, in that the client would be encouraged, through therapy, to bifurcate towards another attractor and establish a

more functional life cycle. Traumatized children who tend to remain 'biologically' fixated on reliving past traumatic events shut themselves off from experiencing new situations which may help towards reconstructing their lives. They require to feel safe before dealing with the traumatic events without the risk of becoming extremely disorganized in their functioning (Kolk, 2003).

This view is further elucidated using the concept of reciprocal causality (Lasser & Bathory, 1998). It is possible to distinguish between linear causality and reciprocal causality on a number of dimensions:

- Degrees of determinism and freedom
- Discrete and non-discrete variables
- Contiguous and non-contiguous time

In the first of these the move from the linearity of cause and effect, including chaining of several variables, is considered a poorer framework for discussing change in human interactions than a model which supports the idea of one cause affecting several variables at once and being distributed across a network of reciprocal interactions where each variable in turn affects several others. This view accords with the previous discussion of iteration as a process, where the variable can affect itself. At a macro level of cognition, this is termed self-reflexive behaviour and can be considered to be the basis for a system increasing its degrees of determinism and freedom, which is consistent with the complexities of human behaviour.

The second dimension regarding the discrete or non-discrete nature of variables is an acceptance that in certain aspects of the physical sciences precise and accurate measurement of each variable is necessary. However, there is also a way of dealing with the processes of interactions which focus on the pattern of interaction rather than a discrete outcome. This latter end of the dimension is utilised in the physical sciences, as well as human interactions, in the form of Fuzzy Logic (Kaehler, 2007). This form of logic deals with non-exact variables and uses terminology and a mathematics which deals with terms such as ‘almost’ and ‘very’.

In human interactions this is particularly pertinent when looking at the context within which interactions take place and how the complexity of those interactions between the players and their context are studied. One example given is that of an eye blink – this could be a nervous tic at an interview or a wink between individuals in a club. If measured as a discrete variable, a nervous tic could be useful measure of anxiety. However, if it is considered a wink, further measures of the relationship between the participants and their own contexts would be necessary to initiate any analysis of the situation to the wink. This simple example highlights the importance of context to help derive meaning. The importance of context in the interpretation of school behaviour has been shown in many of the studies of children in the education system (Sutoris, 2000).

The third aspect, contiguous and non-contiguous time, is a major constraint on analysis of linear interactions. Cause and effect must be close to each other in time, otherwise it is difficult to link the two as independent and dependent variables. So much of what we know

of human interaction is temporally non-contiguous, for example, someone holding a grudge or returning a favour. The exact link between cause and effect can be indeterminate.

Variables may well be related but not necessarily deterministic. Many other variables may have intervened during a prolonged temporal gap.

The use of concepts from chaos theory can be applied to family interactions where the complexity of the interactions between individuals is acknowledged and the importance of the system of interactions highlighted (Butz, 1997). Producing change in family interactions and systems of interaction is a central focus of therapeutic interventions (Koopmans, 1996). It is the work of the therapist to move the family system away from its current non-adaptive stability (one attractor) towards 'far-from-equilibrium' conditions to allow an input to the system to move it towards a bifurcation point and a potential new form of more adaptive functioning (a different attractor). Dysfunctional patterns are often formed after major life events such as family bereavements, loss of employment, moving house. In chaos terminology, these are 'far-from-equilibrium' conditions for a family where there is the highest likelihood of a significant shift in family functioning by moving from one adaptive attractor state to another less adaptive one.

This focus on systems and system change is directly applicable to children and young people in schools (Sutoris, 2000). Sutoris' description of schools as open systems which:

- depend on the exchange of information between participants
- have highly complex internal communication systems (particularly secondary schools)

- have a boundary between the school life and the outside environment
- are dependent on the input of new information to remain positively functional
- have clear outputs (educated students with minimal 'wastage')

is clearly reminiscent of the type of system described by Capra above, p.43, as a living system.

It is within this context of a 'living system' that children and young people themselves also mostly operate as open systems and are involved in the dynamically complex operations of learning (Durkin, 2000; Jorg, 2000). An interesting aspect of viewing learning in this light is the link described in peer to peer learning and Vygotsky's concept of Zone of Proximal Development or ZPD (Jörg, 2003). A model can be described which focuses on the reciprocal causality between peers which creates a non-linear outcome of a creative nature (Anderson & Soden, 2001; Kuhn & Lao, 1998; Lasser & Bathory, 1998). I suggest that it could be more useful to consider this form of learning as taking place within a Generative Zone of Proximal Development, that is, a dynamical version of Vygotsky's ZPD. This dynamical model could be used to try to account for learning which takes place with young people beyond that of simple linear input by teachers. The focus is on a process which is dynamic and autopoietic and, where successful, is generative of new learning structures.

This conclusion relates well to the microgenetic studies of child development (Flynn *et al.*, 2006; Fogel *et al.*, 2002; Lavelli *et al.*, 2006). An infant is construed as a social being from earliest days in the relating between mother and child. The child is seen as inherently social and developing several 'I's' as a result of the developing dialogues with the mother. These

dialogues or (often) ritual interactions are construed as 'Frames'. Interactions develop within different frames and new frames develop with time.

A distinction is made between rigid frames which limit the opportunity for growth and creative frames which enhance growth. The difference is highlighted by considering creative frames as more appropriate to a sense of 'becoming' rather than an experience of simply 'being'. During creative frames, experiences are explored and meaning expanded, whereas in rigid frames there is a lack of development and a tendency to rigidity and oppositional interaction. Although frames are dynamically stable in that they recur as recognisable forms in a relationship, they can still be indeterminate and allow for variation when revisited (Fogel & Lyra, 1998).

This description of development has clear parallels with learning in general, and school learning in particular. Teachers could recognise the differing experiences of rigid and creative frames in their interactions with different class groups. The ability to move between frames would seem a positive characteristic for both young people and their teachers. This relates well to the earlier discussion of open systems and their ability to respond to small perturbations in their environment and adapt positively (learning) as opposed to more closed systems which are defensive of themselves (oppositional and 'failing'). Certain systems are not amenable to change as illustrated in particular by children, young people and adults who suffer from PTSD (Kolk, 1994).

The earlier reference, p.67, to the work of Gameson and colleagues in developing a rigorous model for educational psychologists' interventions uses the concept of re-framing (a very familiar concept in EP practice) (Gameson *et al.*,2003, 2005). The use of the concept of 'frames' has considerable utility.

Learning new strategies is an essential aspect of learning successfully at school. A microgenetic approach to studying how this new learning takes place helps clarify what new input in particular and under what conditions children learn new strategies most effectively (Siegler & Svetina, 2006). Intensive sampling of the behaviour under scrutiny allows for recognition of exactly when and under what circumstances a new strategy is acquired.

Discovering the new strategy is only the first step in strategic change; utilising it consistently is the criterion for acquisition. Siegler and Svetina demonstrated that contrary to the findings of some studies, young children (5 yrs. of age) acquired new strategies most efficiently when given a logical explanation of a class inclusion task, as opposed to empirically working out the correct strategy. The reason given for this by the authors suggests that helping children move to more abstract reasoning with the problem helps focus on the relational dimension between classes of objects. What could be added to this explanation is that helping children move away from one attractor (their current reasoning style) and by input of new information (the question to be answered) at the children's now far-from-equilibrium position (if the logical explanation is convincing to them) helps shift them to a new attractor and establishes the new strategy. The authors also studied the adoption of the new strategies on a cross-sectional basis. The comparison between the two methodologies highlighted that

the microgenetic approach showed a brief point of oscillation and variability from correct to incorrect responses in one group of individuals, a second group who progressed directly from least to most advanced strategy use, and a third group who regressed briefly from correct to chance level responding before progressing to consistently correct responses. This latter group's responses would be indicative of the children's thinking being at a point of bifurcation, and either jumping between the two states of old and new attractor and then moving to the new attractor (the 'Aha!' Experience) predicted by complexity theory. The cross-sectional results masked this information.

It would seem therefore that complexity theory does offer, at least, a new set of metaphors to describe and account for change in human development. This language helps capture some of the complex aspects of change and enrich explanations of why certain change takes place in particular ways. Applied psychology is a science of qualities not only quantities, and needs to include such concepts as unpredictability and disorder where everyone is involved in a continual round of re-construction and co-construction. As indicated in the examples above complexity theory is a helpful adjunct to communicating this 'fuzzy' science of psychology (Perna & Masterpasqua, 1998).

Where does the concept of 'Transition' sit in this explanatory framework? As previously indicated, a living system such as a human being is constantly acquiring new information from the environment through its perceptual mechanisms and these operate as an active boundary between the inner and outer environment. There is clearly an adaptive aspect to this active 'filtering' of information which allows the inner ordering of the system to

continually adapt to this interplay and grow/develop. If this encountering of new data is construed as part of a continuum from small events to very large events in relation to the system's ability to cope then minor day-to-day familiar occurrences are assimilated with ease and require no new significant shifts in the system. If major critical events like experiencing a car crash, an unexpected bereavement or some form of abuse occurs, then the system can moderate the effect of this input by responding in a self-protective fashion with the possibility of PTSD occurring as indicated above.

If we consider 'Transition' as a special form of change, event or experience worth labelling, then it can be considered as relating to circumstances which are potentially occurring somewhere towards the more challenging end of this continuum. This may be the reason why people apply the label 'Transition' and work around transitional studies to what is perceived as changes from one setting to another involving the input of considerable levels of different information (Hemmeter & Schuster, 1999; Whaley & Goode, 2005). The obvious transitions studied in the educational sphere are pre-school to nursery settings; nursery to primary school; primary to secondary school and secondary to post-school provision. However, given the concepts involved in complexity theory and the language of frames from microgenetics and re-framing from modern intervention models, it is possible to consider transitions encountered by children and young people in a proportionate, positive and possibly more manageable manner.

2.2 Adolescence – a time of significant personal change.

The focus of the current study is transition from school to post-school provision for young people aged 15 –16 years. This coincides with the middle developmental stage referred to as adolescence, defined by the World Health Organisation (2007) as from 10-19 years. As an area of study, adolescence is extensive, having several major journals devoted to the topic. An idea of the scale of study of adolescence is illustrated by a search on CSA Illumina which indicates more than 285,000 articles published (Google identifies over 35 million references). Rather than attempt to survey the complete literature on adolescence, it is intended to focus on four aspects relevant to the current study, namely:

- 1) Young people are within themselves experiencing a period of relatively rapid developmental change, that is, puberty and cognitive re-structuring (Kuhn, 2006; Luna *et al.*, 2004).
- 2) The family structures to which young people belong have become more diverse and can be highly variable in the role models they offer (Seaman & Sweeting, 2004; Shanahan *et al.*, 2000).
- 3) Some of the factors affect most young people attending a secondary school provision at this stage. They are part of the milieu of other young people in a similar position and are all subject to quite intensive experiences of taking in large amounts of new information academic, social and personal.
- 4) Specific transition interventions which are adopted as a means of supporting young people at this complex stage.

2.2.1 Adolescence – A period of rapid developmental growth

The adolescent brain develops in a particularly rapid manner with regard to synaptic pruning, maturation of processing speed, voluntary response suppression, and spatial working memory in middle to late adolescence (Luna *et al.*, 2004). There is also further development of executive control in the learning of new concepts demonstrated by increased meta-awareness in decision making (Kuhn, 2006). Adolescents' cognitive and bodily structures are therefore changing relatively rapidly and their external environment is awash with new and often diverse information. It is a time of major change for young people. Added to this is the prospect for many of these young people that they will leave the relatively familiar, although not always comfortable, confines of school for the first time, 12 years after joining it in their infancy. These factors suggest that this time of transition, school to post-school, needs to be given particular attention. This juncture for a young person can be defined as 'true chaos' in that it is a time rich in information and highly sensitive to contexts and changes in the environment (Peat, 2007).

The purpose of transition work is often to prevent young people becoming trapped in a 'limit cycle' which can lead to repetitive responses, reduce their ability to process information in a creative manner and bar them from accessing a new range of behaviours. It is useful to take the positive perspective that '...adolescents are active, inquisitive and resilient beings in constant interaction with their ecologies' (Durkin, 2007). However, this does not diminish the possibility that young people may need support in school to help them develop more mature attitudes, rather than simply focus on academic achievement (Sutoris, 2000). The

importance of secure family supports is crucial if young people are to undertake the journey to adulthood successfully, as is discussed later.

A highly significant finding from brain research is that there is a wide variation in maturity and diversity in the brains of adolescents (Kuhn, 2006). Not only do some 12 year olds perform no differently in cognitive tasks from 'the typical adult', but specific age related developments have a much wider variation than in earlier childhood. Possibly of more significance is the appreciation of the extent to which brain development in adolescence is particularly influenced by the interactions with environmental opportunities. This is reflected in the increased neuronal production and pruning which takes place around this period. Unused neuronal connections are discarded and increased myelination supports increases in processing speed and localisation in brain circuitry (Luna et al., 2004).

2.2.2 Personal and family changes for adolescents

Adolescence is seen as a major area of transition by many researchers and studies have assessed that this time of transition is not a singular event but should be rather considered as a series of multiple transitions (Coleman & Roker, 1998). The impact of these transitions on young people will be dependent on such issues as timing, personal resources and supports available (Graber & Brooks-Gunn, 1996).

One model which tried to address how adolescents deal with the complex area of their transitions into adulthood is Coleman's focal theory (Coleman & Roker, 1998). This model proposed that adolescents tend to focus on one major issue in transition at a time. This was

seen as a way of coping with the anxieties associated with working through new and challenging experiences. Studies have indicated some merit to this model (Coleman & Roker, 1998; Goossens & Marcoen, 1999; Kloep, 1999).

A Scottish study broadened the cohort of young people to include a wider range of social groupings than Coleman's original sample and also included social class of family background as a factor. It was found that there were broadly age-related trends in the development of young people's leisure pursuits (Hendry *et al.*, 1996). However, they found gender differences in relation to perceptions of support from the home background in early adolescence and adherence to their own local area in middle adolescence. Social class also linked to particular leisure involvement although the age-related trend was present across all social groups. Despite these differences there was a general finding of support for Coleman's theory. Of particular note was the conclusion that self-efficacy operated largely independently of social class background, confirming the notion of the young person as 'active agent' in their own development as crucial. The obverse finding indicated that a disrupted pattern of relational development was associated with unemployment in later adolescence.

A further review and empirical study, including careful analysis, indicated only partial support for the model (Goossens & Marcoen, 1999). This study concluded that, despite finding that there were peak ages at which certain concerns became the focus for a large group of adolescents, a better test of the theory needed to identify the level and variety of concerns of individuals and then aggregate these to find out if there was a tendency to move

through specific areas of concern in a temporal sequence. When this approach was tried, only a minority of young people tended to report anxieties regarding one issue at a time. A general finding seemed to indicate that if young people were anxious about a particular issue, then the pressures to deal with other issues at the same time was the most important determinant regarding successful resolution of the central issue.

A separate study in Sweden supported this aspect of the focal theory, finding that depression scores were highly correlated with the number of reported problems that adolescents felt they had to deal with (Kloep, 1999). However, a balancing criticism of the focal theory is the assumption that young people have a clear choice of which problems they decide to focus on and in what order. This assumption completely relegates the power of relatively fixed factors such as parentage, family structure, economic viability and geography as major influences on young people's development. Some matters are largely outwith the control of young people.

Coleman's focal theory is a useful addition to other models of adolescent development. The most consistent finding from all of these studies is that the young person must be regarded as an active agent in their own transition and that the person and their context are related to one another through dynamic and reciprocal interactions (Phinney & Goossens, 1996), indicating that transitions, and a young person's development through them, is not a simple linear process or set of processes. Coleman later acknowledged both the value of the focal theory to help clarify some of the positive coping mechanisms used by young people and the value

of researching further into issues such as positive aspects of adaptive mechanisms and resilience (Coleman & Roker, 1998).

Related concepts of adolescent development, for example, that psychological separation from parents must precede individuation, have not been validated by empirical studies (Meeus *et al.*, 2005). Rather, it appears that individuation and separation occur as parallel processes with more complex issues involved in the development of the young person's identity. It is a more feasible explanation, supported by research, that the stronger the emotional support from parents, the stronger the development of the individual's identity (Meeus *et al.*, 2005). This is further supported by research which indicates that the changing perception of adolescents of their parents as 'parents' to parents as 'people' is not directly linked to development of their self-identity, but that these are also parallel developmental processes (Andersen *et al.*, 2006).

Further findings (Hendry *et al.*, 1996; Meeus *et al.*, 2005) indicate that, in general, for young people at the adolescent stage:

- Identity develops steadily with age
- Commitments grow stronger
- Levels of exploration of information and usage increase
- There is a strengthening association between commitment and emotional adjustment
- There is a low level of association between exploration and emotional adjustment.

These latter two findings may seem initially paradoxical. However, these findings highlight the difference between structure and process. As a young person becomes better adjusted emotionally they are able to make stronger commitments and this is part of a feedback loop to further strengthening their emotional adjustment. It is by exploring new situations and challenges that the young person arrives at this point in their development, and as they become more secure in their identity, there is less need for them to be explorative.

The Hendry et al. study attempted to broaden the cohort of adolescents beyond Coleman's original highly achieving academic pupils. However, the mixing of methods from individual interviews for the younger adolescents to postal questionnaires for the older group weakens the conclusions in a study which is focussed on developmental trends across age groups. The focus of the study on the development only of leisure pursuits also limits the conclusions.

Some young people do turn to less positive means of coping with adolescent issues and alcohol use receives considerable attention because of the resulting damage it causes to their lives. As an example, young people in the age range 16-24 yrs drink to excess more than any other age group in Scotland (Scottish Executive 2004a). Other studies have highlighted the problem with younger school pupils (Bradshaw, 2003; Currie *et al.*, 2004). Many of the studies highlight the dangers to the young person's physical health (Coleman & Cater, 2005). The latter study sought information on the motivations for getting drunk and, among others, young people cited '...to escape and forget problems'. This is a practical illustration, although not a positive one, that, consistent with focal theory, the complexity of dealing with multiple issues can prove exceptionally challenging for many young people.

Parental attitudes to the young person's drinking seemed to indicate either a lack of knowledge or even lack of interest. This is the negative side of the above finding regarding parental support to help develop a strong sense of personal identity. This growing trend of alcohol abuse is a basis for concern regarding young people's later life choices, particularly if these choices are based on a lack of secure identity and reliance on coping mechanisms of avoidance.

In a wide-ranging review of young people's developmental paths to adulthood, Shanahan describes not just the complexity of this move for young people, but the accompanying complexity of studying this area.

'The transition to adulthood is now viewed less as a discrete set of experiences that are temporally bounded in the life course and more as an integral part of a biography that reflects the early experiences of youth and also that shapes later life.' (Shanahan, 2000, p.668)

The transition paths for young people are not only a feature of their past development, but involve an interaction of that development with the opportunities afforded to them by their encounters with the contexts within which they live. Shanahan uses the term 'planful competence' as involving not just innate or learned abilities, but the ability of the young person to deal with challenges in their life course as they arise. This is reminiscent of Erikson's approach to personality development at the adolescent stage (as described in (Heffner, 2004)).

It is apparent from the sociological studies reviewed by Shanahan that, although there are clear transitional markers to adulthood (for example, date of leaving school, marriage, parenthood), these markers are becoming more individualised in modern society and open to considerable flexibility partly due to changes in societal norms and family structures and also due to more flexibility in the educational, training and employment sectors. Transition to adulthood has moved during the 20th century from distinct linear progressions to a more dynamically complex set of challenges, transition into full time occupation now being established as starting while still attending school (Scottish Executive, 2002). Some markers are also reversible, for example, divorce and re-marriage and return to full time education after full time employment are now not uncommon.

Young people's plans and planning for future life merit further study in relation to the practicality of matching aspirations with accessible opportunities, referred to as 'bounded strategic action' thereby bridging sociology and psychology (Shanahan, 2000). While acknowledging that the transition to adulthood has become more variable, less predictable and more precarious, Shanahan does conclude that studies suggest more clearly marked connections between educational experiences and occupations and that these connections are highly desirable to maximise the life chances for young people. How this is to be achieved is not explored in the article.

A useful development of these themes would be a further exploration of the contribution of specific educational experiences in the life courses of young people at this stage. As indicated by the number and types of initiatives promoted by the Scottish Government, formal education could be a significant contributor to the development of skills leading to 'planful

competence' or 'bounded strategic action'. Shanahan appears to overlook the importance of the educational dimensions as described by Fullan (2003).

Shanahan's view of the complexity of the move from adolescent to adult is ratified in the employment and employability characteristics of the school to post-school sector by a careful study of the career trajectories of young people in Northern Ireland (MacVicar & Anyadike-Danes, 2002). They tracked the sequence of employment and employability events in the young people's lives after their first statutory school leaving date and noted whether they:

- Stayed on at school;
- Started further education;
- Started higher education;
- Took a training course;
- Went directly into employment;
- Became unemployed.

By exploring variations in that sequence across a wide cohort, the authors were able to determine the predominant career paths for groupings of these young people using cluster analysis. The model was fine grained enough to maintain distinctions between groups who were staying in one sector for a prolonged period and then switching to another, for example, unemployed and then employed, or vice-versa, as compared to young people who were 'dipping in and out' of the job market. They were particularly rigorous in their checking of

the cluster analysis model using split comparison and random allocation checks in determining the reliability of the findings.

Apart from determining the career paths into clear groupings, they were able to compare these findings with stable background data on the young people such as gender; religion; socio-economic factors and geographical factors to determine the most at risk groups for long term unemployment. Not surprisingly the model identified, among others, both positive and negative significant findings in relation to higher education/father's professional status and unemployment and father being unemployed respectively. They suggest that the factors are stable enough within this robust model to be predictive of young people most at risk of long term unemployment prior to their leaving school, offering the potential for early intervention. The robust nature of this model would suggest that it could be a good model for Careers Services to utilise in their tracking and intervention in regard to reducing the NEET population.

The literature in this field, both psychological and sociological, is strongly suggestive of rapid, personal development within a context of diverse and changing family supports for adolescents when they are preparing for the transition from a school to post-school environment. How adults, particularly parents and teachers, construe young people as either young adults or children is also a strong influence on young people at this particular stage of their development.

2.2.3 Schools as support for the development of young people.

As indicated above, Section 2.1.6, p.59, in the discussion of complexity theory and microgenetics, schools have a wide range of strategies available to support the academic

development of young people. As also discussed earlier, Section 1.2, p.17, secondary schooling in particular tends to focus on academic learning rather than the development of the whole of the young person (Scottish Executive, 1999b; The Education (Additional Support for Learning) (Scotland) Act 2004; Scottish Executive, 2006a). To what extent do schools support the emotional and social development of young people?

Many studies have tended to focus on the area of what does not support young people in secondary school by studying 'disaffection' (Gutteridge, 1998; Solomon & Rogers, 2001). Presumed causal factors cover the obvious such as educational failure and lack of parental support to lack of school relevance to life and unappealing subject matter. In one study, teachers' views in one school produced twelve main factors focussed mainly on lack of pupil engagement in the processes of the classroom, and, although predominantly attributed to 'average' and 'below average' pupils, disaffection included a significant number of pupils deemed 'above average' (Gutteridge, 1998).

A further study examined the disagreement between pupils and teachers with regard to the causes and useful interventions to tackle difficult behaviour in the classroom (Miller *et al.*, 2002). The authors also included an examination of the parental perspective and compared these with prior pupil and teacher studies. The conclusions drew on a factor analysis of questionnaire responses and after some manipulation of the factor rotation produced a three-factor solution (although the authors acknowledge that a single factor solution may have been more appropriate and could reflect the parental appreciation of the complexity of individual and systemic factors influencing pupil behaviour). After checking for possible

gender and ethnicity bias they concluded that parents and pupils agreed that 'fairness' in teacher handling of misbehaviour was seen as most important, although this was not considered as important by teachers. Of interest was the 'pupil vulnerability' factor over which there was agreement between pupils and parents. However, the parent questionnaire also included 'adverse family circumstances' items in the 'pupil vulnerability' factor. This was a separate factor for the pupils and seen by them as not influencing pupil misbehaviour. It appears that teachers and parents agree on certain family circumstances as relevant to pupil behaviour, but not the pupils. Parents and pupils agree that teacher fairness is an important factor but teachers disagree. These findings were considered to be of utility in focussing interventions to prevent misbehaviour and disaffection.

In an advisory report to schools and local authorities in England and Wales from the DfES (DfES, 2005b) there was a major focus on attendance and absence as major indicators of young people's disaffection with school. The report makes several suggestions from early notification to parents to developing a strong ethos within the school of attendance. The report also offers advice on good practice of supporting the learning of young people and dealing fairly and reasonably with acts of misbehaviour.

Holroyd and Armour (2003) present a review of the research findings on 'disaffection'. They conclude that there is a general consensus in the literature on the wide-ranging number of factors involved in disaffection. These factors range from social factors such as poverty and delinquency, through systemic factors such as exclusion from school and family breakdown and also include personal factors such as troubled, disengaged. However the main conclusion emphasised the individual nature of the interplay between many of the factors.

There is no single cause or route to disaffection, nor a predictable outcome for that disaffection.

With regard to successful intervention to retrieve young people who have become disengaged as a consequence of disaffection, a mentoring study with young Afro-Caribbean gave some useful indicators (Shiner *et.al.* 2004). The focus on relationship building proved to be particularly successful rather than a focus on the negative outcomes of that disaffection such as alcohol or drug use. As a corollary to the discussion above where attendance was focussed on by the DfES to help minimise disaffection, regular attendance at the project and regular contact maintained with the mentor were used as the definition of 'high engagement' with the young people. In seeking to offer longer-term support to young people, Green and White (2007) recognised the strong influence of local, social networks which affected aspirations and behaviour. They saw it as important to break out of these systemic factors in the community which may mitigate against successful re-engagement in socially worthwhile activities. Making young people aware of choices outwith their immediate neighbourhood and offering them access to wider opportunities was seen as very important. A good example of this approach was demonstrated in a study which emphasised the importance of out-of-school activities for young people (Wikeley *et.al.* 2007). It was clear that the young people found the supportive relationships built with adults in these out-of-school activities particularly helpful in developing their self-esteem. This contrasted sharply with their views of their teachers who were similarly in a relationship of 'leader' with the young people in school, but were viewed in a negative undermining role. Having participated in the out-of-

school activities, the young people viewed the adults in that setting as co-learners which helped build their own self-belief in their own learning capacity.

In a wide-ranging study of pupil support in Scottish Education Authority schools commissioned by the Scottish Executive, Aberdeen University reported a rather bleak picture of the partnership between schools and parents in regard to supporting the mental well being of pupils (Shucksmith *et al.*, 2005). Involving an extensive literature review, a telephone survey and 'intensive case studies' of 6 specific interventions in different local authorities, Shucksmith *et al.*'s conclusions amounted to very little beyond the mundane and already well established knowledge base in educational research. The researcher bias seemed rather obvious when they commented that teachers were reluctant to embrace mental health vocabulary when dealing with issues arising in schools and concluded that this was a significant factor in teachers avoiding 'Ownership' of mental health/discipline problems'. There was no acknowledgement that the lack of acceptance of mental health terminology when dealing with discipline issues may well have indicated particular sensitivity to the pupils' feelings on the part of professional teachers or a more appropriate focus on solutions as opposed to labels. A significant finding was that the Scottish Executive funded initiative of New Community Schools had not managed to engage the community with the work of the schools in economically disadvantaged areas. A further finding was that neither externally developed initiatives of a simplistic nature nor wide ranging policy requirements had gone any way to addressing the complexity of developing systems to support pupils adequately. Successful support required a wide-ranging set of measures operating at differing levels across the education system.

The researchers also seemed overly critical of, for example, the introduction of the ASSIST programme in schools in Aberdeenshire Council (based on the Birmingham University, Framework For Intervention model of a context-based, solution-focussed approach to supporting schools, teachers and pupils with respect to low level disruptive behaviour). They cite the difficulty inherent in focussing on contextually based issues as potentially masking the individual difficulties which children and young people may have due to personal circumstances. They conclude that children and young people's mental health difficulties may therefore be overlooked. The researchers appear to ignore their own description of the ASSIST programme as a staged approach to intervening in the lives of children and young people at school. They earlier describe, for example, that persistent behavioural difficulties are raised by the teacher and coordinator to level 2 and beyond where there is particular concern for the young person.

This finding is reminiscent of the feedback from the Single Regeneration Budget (SRB) initiative in England (McHugh, 1999). Teachers did find external agencies helpful in supporting pupils, but it took time for relationships to be developed and there was a tendency to pass the responsibility for the support of the pupils to the external agency. This raised significant questions about the sustainability of the supports when SRB funding ceased (UK Government, 2004). Multi-level intervention, as proposed by Shucksmith et.al., is consistent with the recommendations made to the Department for Education and Skills (DfES) and the UK government (Fullan, 2003, 2005). Fullan views teachers as significant agents of change in young people's lives, not just for educational improvements, but also for social gains and

stresses the crucial nature of high quality teacher education as a prerequisite to achieving this (Fullan, 1993).

A particularly positive study examined the reported characteristics of ten 'at risk' pupils who 'beat the odds' and were working very successfully at school (Rees & Bailey, 2003). Their most important finding was that nothing exceptional in the manner of a specific intervention could be identified as the cause of their success. Several factors previously identified from research were evident:

- Good parental support for the pupil
- An identified key supportive figure in school for each pupil
- Clear and positive aspirations embraced by each pupil
- Either internal locus of control or motivation towards achieving internal locus of control for nine of the ten pupils
- Personal drive and motivation in the learning situation
- A quiet place to work at home (a direct reflection of parental support)
- Access to leisure activities for relaxation purposes.

Most of the above could be developed by a particular partnership support between home and school with active involvement of the pupil. Maintaining the support by joint active monitoring of progress is time consuming and may be a partially limiting factor. Although this was a small group of specially selected pupils who had shown clear risk factors, the 'snapshot' approach in the study may be a limiting factor to the conclusions. However, the

young people at that point in time had overcome the 'risk factors' and were succeeding in school as measured by their SAT scores.

The importance of the school recognising its own role in helping young people develop appropriate skills, attitudes and beliefs in addition to academic achievements cannot be ignored. In particular the lead given by senior management as a model for staff and pupils must be emphasised to achieve an effective school institution (Sutoris, 2000). Recognising the importance of the role that schools have in the development of young people's adjustment in the school environment has led to many initiatives in helping pupils deal with significant moves such as primary to secondary transfer. There is undoubtedly a need as illustrated by the finding that significant positive changes occurred over a four year period in the personal characteristics of young people who had achieved a successful transition to employment in comparison to others who had remained in school during the same four year period (Velde *et al.*, 1995).

A recent detailed evaluation of three such projects by the Scottish Executive focussed on literacy and numeracy as necessary basic skills in S1 and S2 (Scottish Executive, 2007). The authors conclude that the projects studied were successful and listed a set of recommendations in order that these initiatives could be replicated elsewhere. The recommendations covered such areas as:

- Staff
- Cross sector liaison and interchange

- Communication
- Flexibility and responsiveness
- What works where

and were fairly self-evident. The need to tailor the kind of support at transition to the young person's needs and wishes is highlighted in other studies, particularly where the young person's support needs are extensive and/or require a particular focus (Maras & Aveling, 2006).

The literature does emphasise the importance of schools and teachers and their ability to be positive vectors for change in supporting young people. However, as can be seen from the above discussion, 'disaffection' and 'disengagement' are complex phenomena and require many variables to be considered.

2.3 Transition projects - school to post school

A comprehensive review of the literature relating to young people who had not made a successful transition to post school provision (the NEET group) was commissioned by the Scottish Executive to consider the challenges facing young people leaving school (York, 2005). A parallel study looked at the structures in place and gaps in services which could result in young people not making a successful transition to post-school and becoming NEET (Scottish Executive, 2005d). The reports stress the need to individualise the kind of support a young person may require in the post-school arena. Of particular interest is the stress placed on the wide interpretation of the areas of a young person's life in which they

may need support, including such areas as housing and health (for example, drug misuse) as well as help to become 'employable'.

Conclusions from the former study's literature review included the value of locally developed programmes which linked local networks of support and which helped to reach out to the more inaccessible young people (York, 2005). Linked to this finding was the need for effective information systems to track what happened to young people in their transitions from school to post-school. It was further suggested that Scotland could learn from the English Connexions service in this respect as the latter had been developed for longer (Smith, 2005). The role of key worker was highlighted as a service which was invaluable in reaching out to and maintaining engagement with young people. Increasing the flexibility of curricular programmes across school and college links was also emphasised (York, 2005).

The Adams and Smart study reported the outcomes from three discrete areas of Scotland – urban, rural and semi-rural. These served to highlight many of the weaknesses involved in trying to develop projects for disengaged young people. These included:

- Confusing amalgam of services with a lack of leadership and direction
- Lack of clarity of roles, objectives, continuity of structures
- Fragmented funding streams with little coherence or long term aims
- Lack of sustainable structures
- Undervaluing of the key worker role, weakening the bridge between economic and social perspectives
- Lack of use of the public sector as a potential employer

- Weaknesses in monitoring and information sharing.

Positive suggestions included:

- Formal partnerships with written agreements and protocols to improve joint working including partnership between the public and voluntary sectors
- Good engagement with employers in the local area
- Use key workers for support
- Use of outreach approaches based on ‘youthwork’ methods
- Utilise research findings, particularly case studies to engage both teachers and parents (Scottish Executive, 2005d).

Although not included as one of the areas studied, Midlothian was mentioned as a particularly successful neighbouring authority which had already encompassed many of the listed positive recommendations. A major issue for the areas studied was reflected in the short-term nature of funding streams and therefore initiatives which involved high staff turnover (referred to as ‘projectitis’).

Similar findings were reflected in the evaluation of the Beattie Inclusiveness projects (Executive, 2003). Despite the difficulties referred to above in relation to short-term funding streams (which also significantly affected these projects) there were indications of some positive success factors. In particular, the value of key workers, new local structures and some good inter-agency networks which had also been developed.

A major national initiative, which was created after the inclusiveness projects had started, was the formation of Careers Scotland, a national agency to help improve coordination of policy objectives across national and local networks. Specific client based survey indicated that key workers were not seen as just another worker to relate to, but someone with whom the client felt involved and could help them decide on their education, training and employment choices.

Similar evaluation work has been undertaken in England with early indications of the success of the 14 – 19 Pathfinders initiatives (Higham *et al.*, 2006). The Pathfinder projects were encouraged to be innovative and adapt to local circumstances. This resulted in quite diverse approaches to improving the outcomes for 14 – 19 year olds. Differing geographies, socio-economic circumstances and lead agencies were only a few of the differences leading to a range of approaches. Early findings indicated a focus on the 14 – 16 age group, and in particular, extending their access to vocationally directed education. Parallels were drawn with the introduction of the Technical and Vocational Education Initiative (TVEI) of the 1980s.

However the authors were reporting on the very early starts made to the Pathfinder work and there were a few indications of separate 16 – 19 initiatives being undertaken. These were mainly in the area of providing better partnership working, for example, between schools, colleges and training providers. These partnerships are particularly dependent on local networking and agreements as highlighted in the Scottish studies. The issue of leadership within these complexes of local providers was also stressed. Although not focused so much

on findings from the early Pathfinders, the authors were able to offer advice from the literature on such areas as sustainability, the pragmatic nature of many young people's job choices, and the need for quality advice in the whole arena of guidance for the young people.

One of the main groups in the NEET category are young people who may have difficulties with their education extending to their need for extra support within the school system.

Many of these young people will have been identified as having Special Educational Needs or Additional Support Needs while attending school (DfES, 2001; Executive, 2004a). A very extensive longitudinal study of the experiences, achievements and attitudes of young people with SEN during and after their transition from school to post-school was undertaken by the Institute for Employment Studies, in collaboration with Manchester University, for the Department for Education and Skills (Dewson *et al.*, 2004). The research tried to identify the strengths, weaknesses and barriers to further education, higher education, training, employment and independent living for this group of young people.

Based on a literature review, two quantitative surveys of young people, their parents and carers, and 16 in-depth case studies extending to the professionals involved in the post-16 transition, the approach was extremely thorough. The context for the study was the requirement within the English Code of Practice to have transitional planning in place for young people with special educational needs, and in particular, the statutory obligation for those with a statement of special educational needs to have a Transition Plan (DfES, 2001). Just under half of the sample had statements and the special educational needs included, cognition and learning, communication issues, physical and sensory disabilities and

emotional and social difficulties. More than three quarters of the sample had attended mainstream school.

General findings indicated that the young people in special school were more likely to have had a Statement of Needs and, therefore, a Transition Plan and to remember being involved in their own planning. Young people with a statement were more likely to continue in education beyond 16, whereas those without a statement, and, in particular, those with behavioural, emotional or social issues were more likely to be in elementary occupations or unemployed. It was significant that almost 20% of the sample were unemployed or economically inactive as compared to 12% - 13% of the general population who are NEET.

Given that it is a requirement that the Connexions service must be involved in the year nine review, it was surprising that only one in three young people had a meeting with someone from this careers service since completing compulsory education. Parents and carers also found the situation as described in the Pathfinder survey that quality information was difficult to access and differing services did not seem to work together (Dewson *et al.*, 2004). However, the majority of parents were optimistic about their child's future and the levels of support available to assist them.

There was also a significant minority of parents who did not feel so positive about the future. These tended to be the parents of children who had statements who, despite experiencing good transitional planning earlier in their schooling, tended to have their transition deferred by continuing at school. When looked at in depth in the case studies, transitions were most

difficult for those with the most complex support needs. Although there was a range of professionals working to support the transition, there was rarely one person with a good overview of the plan.

Lack of real choice at the post-school stage was a major issue for this group. The study concluded that there were essentially two groups of young people clearly delineated by their experiences. The first group have clearly specified impairments (sensory/physical), receive a high degree of coordinated planning, often experience deferred transition and have issues about appropriate progression and the continuity of the coordination beyond the transition from school. The second main group have less well-defined needs (learning, social, emotional) and are, more broadly, attaining poorly at school. They experience more patchy transitional planning and less statutory support. They enter the lower end of the employment ladder and tend to move between employment and training schemes on a relatively frequent basis (referred to earlier as 'churning', p.26). The broad range of young people with SEN between these two groups will have varying experiences of less well-defined transitional planning and poor levels of effective support. There could be the interpretation that schools still equate 'need' with 'disability'. Although too early to be conclusive, the research raised concerns regarding whether the young people would progress towards meaningful adult lives or be caught in unproductive processes such as 'churning', stagnation or a mixture of both.

Much of the data from this study was gathered from interviews with the young people. They were asked if they could remember having a transition meeting. It could be that the young people, some of whom had significant learning difficulties, who responded 'no', had simply

forgotten that there had been such a meeting, thus biasing the data. However, this does not detract from the lack of significance for the young person of the meeting, if one did take place. The lack of impact of the meeting on the young person would question the validity of the process of transitional planning for them.

An interesting approach to some of the problems identified with the transition of young people was established in Clackmannanshire in Scotland. A Transition Co-ordinator post was created and an evaluation of the role undertaken (McGovern, 2005). The post was based in a local college of further education and managed by the Psychological Service, thus allowing the co-ordinator a measure of independence from the major post-school resource providers. The evaluation involved surveying professional, parent and young person's views on the success of the role of the co-ordinator. Although acknowledged as not an independent evaluation (the co-ordinator undertook the interviewing), useful information was gleaned.

The young people involved were those who attended a school which made provision for young people with the most complex support needs, and for whom a formal Future Needs process (under the Scottish Special Needs legislation) was planned. The co-ordinator fulfilled the key worker role and maintained contact where necessary throughout each student's college placement. The co-ordinator also ensured that information was made available to parents and young people appropriately. Although not an exact match, a comparison was drawn between the co-ordinator's role and that of the 'Kurator' in the Danish education system where every young person has a 'Kurator' appointed to them before leaving school. The findings of the evaluation highlighted the positive role of the

Transition Co-ordinator in particular who ensured some measure of inclusion for the young people offered support.

Many studies have focussed on young people with either clearly identifiable support needs or attending a special support facility such as a special school. Not only are the young people clearly in need of supported transition processes, they often form a relatively homogeneous group for evaluative study. One such study focussed on parents' retrospective views of the planning process they had experienced when their children had moved from a residential special school to adult placements (Smart, 2004). Many found the process unsatisfactory from the point of view of:

- information not being made available early enough
- lack of real choice
- no involvement of the young person or their views being sought

Although a lengthy and stressful process, most parents eventually were satisfied with the placement outcome for their child, although a minority still had a significant struggle in front of them. The lack of involvement of the young person in what is often a quite traumatic time of change was postulated as the reason for some of the subsequent adult placement breakdowns.

Transition from school to post-school for young people with disabilities has been acknowledged elsewhere as a topic worthy of major focus. In the USA, the federal government has commissioned a website at the 'University of Minnesota' to act as a

gateway for information, resources and advice at this important juncture in a young person's life path (University of Minnesota, 2007). It sets national standards in transition practices and offers support to help achieve best practice against these. There is a linked website designed by young people for young people to help them take an active role in their own future transition planning (<http://www.ncset.org/websites/youthhood.asp>). The focus is on beginning these processes well in advance of the young person leaving school.

A review of the federal government's initiative was undertaken (Kohler & Field, 2003). Kohler and Field found that many of the initiatives resulting from the transition services development, such as vocational education, work experience, tutoring, extracurricular group activities and parental support indicated both positive contributions to school performance and post-school outcomes. One of the studies cited indicated that young people who had graduated from special education programmes and had high self-determination scores in their final year, were more likely to be employed and have higher earnings than those with lower scores (Wehmeyer & Schwartz, 1997).

The transition to adult roles for adolescents is a complex process and a myriad of factors work together to influence the post-school outcomes for young people. Because of this complexity, it can be helpful to think in terms of Transition-Focussed Education as a fundamental concept which drives all education programmes and that transition is not simply a bolt-on at certain stages of a student's educational career. The focus therefore becomes positive, identifying the strengths, abilities, options and self-determination for future planning. Shanahan cites several authors who highlight the complexity of the planning

process and, as indicated previously, remind educators of some of the challenges faced by relatively fixed factors such as economic circumstances and geography, both for individuals and their communities (Shanahan, 2000).

A broader based study of post-school transitions was undertaken by a group of educational psychologists in Scotland as part of the Professional Development Programme (PDP) (<http://www.ltscotland.org.uk/pdp/>). Topics studied ranged from individual project evaluations to developing a strategic context to maximise post-school psychological services (Allison & Stewart, 2004-2005; Hellier, 2005). It is clear from the findings of the various reports that there is a significant support role for educational psychologists in developing both practices and processes in the transition from school to post-school services for young people. The focus needs to be on developing services and attaining consistency of practice. A recent study of the school to post-school transition experiences of some parents and young people, where the young people had autistic spectrum disorders concluded that the variation extended from no planning to high quality planning in just one local authority (Ewing, 2004). Given the social vulnerability of these young people outwith the structured support offered in most school settings, there is a significant need for this development work.

2.4 Concluding comments:

In examining the literature on change, transition, adolescence and school to post-school transition practices, what lessons are there to learn? As living beings, change is not only natural to us, it is that vital process of life which we call living. Change is an inherent property of our biology and therefore our psychology. It is also instructive to note that

change for living organisms is not a simple, linear process. With particular reference to people, we are in a constant interaction with our environment, both internal and external. These interactions are a constant process of assimilation of information through feedback loops and adaptation, that is, learning. This learning is not only confined to an internal adaptation, but also to that dynamic boundary between us and our environment which we conceive as our perceptual system. The boundary also learns from these interactions.

Theories of change as applied to human beings can be informed by the study of complexity and chaos theories and how these relate to our biology and psychology. This is a useful backdrop to consider when we look at adolescence as a particular set of processes of significant change in young people's circumstances.

The complex of factors operating around this critical time for young people underscores the complexity and lack of predictability of outcomes for them. Attempts to support young people through this time, particularly at the school to post-school transition point need to take account not only of the quantity of support on offer, but the quality and precise nature of that support. By taking account of the factors operating and the young person's own perceptions of the changes they are part of, we may be better able to help them achieve positive, sustainable long-term outcomes. By having the right kind of support available at the right time we can carefully monitor with the young person their responses to that support. As complexity theory indicates, changes may not be predictable, but the response of the system of change to feedback can be observed and adjustments made accordingly.

The indications of the links between living systems, Complexity Theory, Chaos Theory and Frames, together with the model of investigation used in the study (described in the Methodology section 3.2, p.112) will be discussed with regard to the data gathered in Chapter 5, section 5.7, p.222, and the conclusions drawn in Chapter 6, p.226.

Chapter 3 Methods

This chapter considers the approaches used to evaluation and the particular choices of models used to address the research questions posed.

3.1 Introduction

As indicated earlier, the present study is an evaluation of the extent to which a programme, developed locally in Midlothian Council in which the author works as an educational psychologist, was successful in supporting certain young people at the point of transition from the school to post-school arena. A major limitation in the approach to the study was the fact that the evaluation was necessarily post hoc. The programme had been running for several years and was generally considered by the many stakeholders involved – referring agents such as schools' senior management team members, education welfare officers, family support workers (among others), as well as PAVE staff - to be 'successful'.

However, the bases for these judgements were open to scrutiny. For example:

- i. Referrers generally would see acceptance to the programme as successful because it indicated completion of the referral process for them. The fact that they were referring the young person to an external provision, indicated that they saw the solutions to the young person's problems as being solved out-with the school. The data from the initial structured interviews tended to support this view (see p. 161), i.e. success meant the removal of a 'problem', that is, the young person, from their list of concerns or, more positively, matched what they considered to be the support needs of a particular young person. Prior to leaving the school environment, these young people tended to absorb a significant quantity of staff time in either pursuing

non-attendance procedures or exclusion procedures, both of which required lengthy attempts to engage parental support. As later analysis of the data illustrated, whether the young person continued to attend the programme was not an issue for the referrer once acceptance to the programme had been realised.

- ii. PAVE staff saw the programme as a success largely because the young people mostly attended and seemed most of the time to be reasonably happy.
- iii. Whether PAVE met the young person's needs in the longer term regarding a future positive path into the adult world of work, further education or training as originally intended was not clearly established by anyone. There were some limited attempts to track young people beyond PAVE to discover outcomes for them.

Early discussion with the PAVE managers indicated that there was a potential wealth of data available for analysis regarding the participants in the programme from the early years of the programme's start up in 1998. However on examination, much of this data was either idiosyncratic to a particular cohort, or even specific to one individual, so that trying to derive any explanatory criteria from it would have proved extremely difficult. The data had had little consistency beyond attendance at the programme and some measures of qualifications achieved at PAVE. The latter were mainly locally devised qualifications, such as first aid certificates or occasional national awards such as ASDAN or a few SQA Standard Grades. A further difficulty in trying to systematise this data was the wide variety of prior school experience which the young people had encountered. They could have come from any of the six secondary schools or one special school in the area and, for example, have had widely

differing attendance at those schools prior to enrolment in PAVE. Therefore, in trying to establish some measures of the effects of the programme, it was decided to utilise:

- information from current participants
- consistent historical information.

This approach was considered to be consistent with a mixed models methodology as detailed in the next section.

3.2 Methodology

As indicated in Chapter 1, p. 37, the study initially sought to answer the following questions:

- A. Does PAVE successfully engage young people, previously disengaged from school, who have been referred to the programme?
- B. Are the young people who have experienced PAVE diverted from becoming part of the NEET statistics?
- C. If PAVE 'works', what particular features of the programme make it work?

Research Question A was addressed initially by examining the attendance of the young people referred to the programme. It was assumed that if they attended the programme, there was a greater likelihood that they would engage with what the programme offered. The nature and extent of their engagement was considered from their responses in regard to question 'C' above. Their attendance at PAVE was compared to their prior attendance at school.

With regard to Research Question B, it was initially envisaged that appropriate analysis of available data could allow a comparison between PAVE and non-PAVE groups on the dependent variable – sustainable post-school outcomes. However, a simple test of differences based on the Null Hypothesis could prove inadequate as a means of evaluating the effects of the programme. There are a series of features which increase the deviance from an idealised statistical model and thereby increase the risks of arriving at distorted outcomes from evaluative studies, among which are (after Lipsey and Cordray, 2000):

- **Random Assignment** (of controls and experimental subjects). In this study, this is automatically breached, since the evaluation is largely post hoc and based on historical data. This follows the nature of the investigation, since the dependent variable, sustainable post-school outcomes, can only be ascertained at some delayed time after the programme has been implemented. Data is available now for subjects who either were involved in the programme some years ago or not, as the case may be.
- **Within Programme Variations**. Because the PAVE recipients were on work placement as part of their programme, this means that the programme offered was essentially different for many of the recipients. The staff in the work placements (varying from painters and plumbers to care assistants and hairdressers) would offer support particular to them and their organisations.
- **Delayed, Incomplete, or Failed Programme Implementation**. During at least two of the years that the programme ran, there was a long term illness of a significant staff member, and associated temporary staff and eventually staff replacement. These effects could not be controlled or estimated.

- Individual Engagement in Services. This includes the individual experiences of the experimental groups to the different aspects of the programme. What each individual takes up from the programme, for example, the educational component, is a non-controllable variable. The very fact that the staff in the programme try to be supportive of the young person, does not automatically mean that the experience is supportive for all of the recipients. Some young people did not complete the programme.
- Extra-curricular Services. The PAVE project is essentially an open social programme with educational/training/work aspects since it is principally designed to re-engage disaffected young people. As such, there would be many aspects which young people experienced which were not designed into the programme, for example, a particularly supportive or unsupportive employer offering work experience – advocacy versus exploitation. Some employers were not utilised for work experience after feedback from the PAVE participants. Others have been offering quality support for years.

Research Question B was addressed by comparing the outcome destinations of young people who had attended PAVE with nationally collected statistics for Midlothian and Scotland.

Research Question C was explored in an illuminative manner. Common themes were identified from current and recent participants' responses to structured interviews and these were used to form the basis of the analysis.

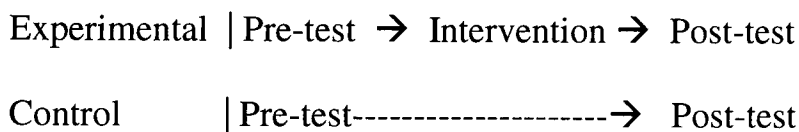
As indicated in Chapter 1, the field of study of evaluation is a complex and developing discipline. The study of psychology has utilised research-based evidence to help develop theory and practice from a variety of models. Frederickson (2002) reviewed the differing approaches and lists the traditional hierarchy of evidence gathering methods (from Scott *et al*, 2001):

- several systematic reviews of Randomised Controlled Trials (RCTs)
- systematic review of RCTs
- RCTs
- Quasi-experimental trials
- Case control and cohort studies
- Expert consensus opinion
- Individual opinion

The emphasis on RCTs as the ‘gold standard’ of evidence-based research applies most particularly to medical research. Where a new treatment or procedure is proposed, rigorous methods are necessary to check both efficacy and safe limits of use. By utilising random assignment of subjects to experimental and control groups and moderating bias by using double-blind application of the treatment, a clear outcome of the treatment effect could be concluded from the statistical analysis of the results. It is, however, not always recognised that the physical sciences based model of RCTs does not necessarily apply directly to the study of human interactions. The concept of a ‘right answer’ or ‘solution’ is challenged by constructivist approaches to psychology to the extent that seeking such an outcome is seen as a misguided activity (Robson, 2002).

As Frederickson points out, when applied to social science interventions, the efficacy of RCT based evidence is not the only consideration (even where an RCT can be utilised) (Frederickson, 2002). The applicability of any researched intervention in the field of social science is at least as important as effectiveness. Where it may be possible for researchers to control some of the variables to reduce error variance in a controlled experimental setting, practitioners who try to apply the intervention in daily practice cannot maintain the same level of controls.

The same issue arises in evaluation research. The original 'gold standard' was described by Campbell and Stanley (1963), borrowing the methods of experimental and quasi-experimental approaches from the physical sciences, that is,



The paradigm may seem simple, but when applied to social science, problems become evident. There is a direct reliance on inferred causality of the intervention for any measured difference between pre-and post-testing of the experimental and control group. However, as indicated above, pp. 113 - 114, several considerations can limit the effectiveness of this experimental and quasi-experimental model (Lipsey & Cordray, 2000). It is a recognition of these limitations which has given rise to the further development of theoretical and practical approaches to evaluation.

Based largely on studies in the field of criminology, the Campbell Collaboration (<http://www.campbellcollaboration.org/index.asp>) comprises a body of researchers focussed on developing quality standards in criminological, social and behavioural science to enhance good decision-making. This group has established a set of methodological quality standards in order that researchers can use explicit criteria for the inclusion or exclusion of studies from systematic reviews. To establish causal effects in studies, the Campbell Collaboration maintain that:

1. Cause should precede the effect
2. The cause is related to the effect
3. Other plausible alternative explanations of the effect can be excluded

This latter criterion leads to a consideration of a validity typology to establish the adequacy of a reported effect in relation to the research question. The threats to the validity of a causal inference can therefore be gauged.

Farrington (2003), a supporter of the Campbell Collaboration, proposes a methodological scale based on 5 criteria, listed from most to least important:

- a) Internal validity – did the intervention cause a change in the outcome?
- b) Descriptive validity – was there an adequate presentation of the key activities of the evaluation?
- c) Statistical Conclusion validity – are the presumed cause and effect related? (that is is there enough statistical power to detect the effect?)
- d) Construct validity – how congruent was the intervention and measurement with the underlying proposed theory of the intervention?

- e) External validity – to what extent can the findings be generalised beyond the studied intervention?

In proposing these criteria, Farrington takes the further step of suggesting application of a simple 4-point numerical rating for each criterion to arrive at a composite quality score for research studies, so that a meta-analysis could accept or reject studies based on this quality score (Farrington, 2003).

Farrington further suggests that the differing levels of importance of the 5 criteria could be weighted with a multiplier to reflect their relative importance. He suggests no objective basis for this weighting, simply his own opinion. It is also not necessarily obvious that external validity should be placed at the lowest level of importance and therefore weighting. What point is there in carrying out any research if the findings cannot be replicated in other settings? In pursuing an apparently objective purpose in rating research studies, Farrington appears to overlook the importance of utility in applying findings from studies. However, the focus on validity in evaluation research is an important one.

The ‘scientific rigour’ of the Campbell Collaboration did not go unchallenged. Cronbach (quoted in (Pawson & Tilley, 2000)) criticised the heavy reliance on internal validity, rather than the more appropriate external validity criteria which should be utilised for political relevance, that is, the wider relevance of the data. However this recommendation does run the risk of generalising from incorrect causal inferences. Although with health programmes, particularly new drug trials, it would seem that the use of RCTs of a double blind nature helps researchers draw appropriate conclusions and suggest causal inferences, in education

and the behavioural sciences we are largely dealing with less specific interventions and have much less control over the programme implementation. As Wortman (1983) indicated, complex interventions in education often have difficulties with the implementation of the programme, that is, their construct validity, which can lead to problems in discerning causal effects. The programme may not have any inherent weakness, but trying to ensure it is utilised in the appropriate manner is not guaranteed (Wortman, 1983).

Qualitative researchers have, of course, criticised the whole approach of positivist and post-positivist evaluators, arguing that this quasi-scientific approach limits the whole nature of the enquiry, taking little account of the views, positioning or personal influence of the client groups involved in the programme. The further criticism of trying to establish cause and effect findings from studies while paying scant attention to the nature and quality of the knowledge gained from the intervention also gives cause for concern (Hayes, 1997).

It is useful to know that if an intervention ‘worked’, why it might have ‘worked’. From that perspective quantitative methods might only be useful at a descriptive level. Campbell (quoted in (Tashakkori & Teddlie, 1998)) acknowledged the utility of combining both methods of enquiry, one being used to ‘triangulate’ the other, for example, by reducing observer bias. Similarly, Miller and Todd (2002) advocated focussing on process, content and outcomes rather than objectivity, reliability and validity for educational psychologists who evaluate interventions using mixed methods. Where quantitative and qualitative methods are combined, this may extend the scope of the evaluation. Others (for example, Tversky & Kahneman, 1974) emphasised the impact of a few information rich examples

drawn from qualitative enquiries as having considerably more impact on programme sponsors/politicians, than tables of numbers no matter how rigorously gathered and analysed. They described the information as ‘more available’, or more accessible to those outwith the research community.

Having reviewed some of the above advice from the literature, the current study appeared, initially, to be more in the nature of ‘pragmatic evaluation’, that is, that it was intended to have utility, feasibility, propriety and accuracy (Pawson & Tilley, 2000). In Pawson and Tilley’s terms, the current study was:

- Political – it was reformist in nature
- Focussed on utility – did PAVE make a difference?
- Affected by accretion – the methods gained knowledge as the enquiry continued
- Iterative – it utilised feedback into the programme

However, it was not ‘pluralist’ or ‘complete evaluation’ as proposed by Rossi (described in (Pawson & Tilley, 2000)), in that it did not try to do ‘everything’.

The approaches taken were not determined by those ‘commissioning’ the evaluation but informed by the above debate. It was considered appropriate to apply some of the criteria outlined by Farrington to address the first two research questions, that is,:

- A. Does PAVE successfully engage young people, previously disengaged from school, who have been referred to the programme?

B. Are the young people who have experienced PAVE diverted from becoming part of the NEET statistics?

In trying to answer these questions, a positivist approach was utilised by identifying sources of data which could be analysed with an acceptable degree of validity. In other words, could PAVE be shown to be 'successful'. The nature of 'success' in this study combined the aspects of:

- Physical engagement through reasonable attendance
- Meaningful engagement for the young people by providing an experience which they viewed as worthwhile
- Continuing engagement with adult led structures such as further education/training or employment for the young people at the conclusion of the programme

Success was therefore viewed as a combination of engagement in the PAVE programme by attending it, and the possibility that the views of the young people could be concluded to be more positive than their perceptions of their school experiences. It was also hoped to illustrate some associated positive outcomes for the young people at the conclusion of their PAVE experience.

The adequacy of the methods used could be judged against the first four types of validity – internal, descriptive, statistical conclusion and construct.

However, Pawson and Tilley's view of evaluation as a means of refining our theories of what seems to be effective in social interventions has the appeal of addressing the third research question:

C. If PAVE ‘works’ (as indicated by the answers to the first two questions), what particular features of the programme make it work ?

Addressing the question of ‘mechanisms’ in Pawson and Tilley’s terms also helps recognise the importance of Farrington’s final validity criterion, that of external validity. Clarifying what features of the programme seem to be relevant to its success should increase the likelihood of replicating the programme with some success in a different setting.

The nature of ‘success’ could be interpreted by reference to only the first two research questions as indicated above. However, identifying what may have changed in relation to the young people as a result of their participation in the programme was considered to be at least of equal importance. Therefore a major strand of the evaluation was an attempt to seek the views of the young people themselves who had recently participated in the programme.

Seeking the views of young people affected by programmes in which they participate has become part of psychological research as evidenced in areas such as:

- Self-regard as a learner (Burden, 1996)
- Students’ views of just and unjust experiences in high school (Fan & Chan, 1999)
- Child’s perspective of transition (Durkin, 2000; Tobell, 2003)
- Listening to a student negotiating the interactions with differing teaching styles (Pomerantz, 2005)
- Children’s involvement in therapeutic stories (Pomerantz, 2007)

These studies all reflected the value of listening to what children and young people had to say, and validated their place in the social milieu of school and family life. In certain studies, helping the young people express their views and frustrations in those settings often led to more adaptive rather than inappropriate behaviours being adopted (Lassonde, 2006).

It was considered that seeking the views of the young people participating in the programme would not only indicate whether PAVE had in any way affected their perceptions of their life course and choices, but also indicate if there were any areas for improvement in the programme. Rather than try to discover ‘does PAVE ‘work’?’, it was considered more instructive to find out ‘if PAVE appears to ‘work’, what is it about it that helps make it ‘work’ and for whom?’

The approach used in the study was more in line with ‘realistic evaluation’ as outlined by Pawson and Tilley (2000), Pawson (2003). With this approach, the main focus was a clarification of the underlying mechanisms which appeared to influence the observed outcomes. Pawson and Tilley’s approach views ‘mechanisms’ as the underlying theories which drive change in a particular context. They refer to this as a generative model of causation.

Rather than attempt to use a successionist model of logic derived from experimental and control group experiments, they advocate a model which more closely aligns itself with what actually takes place in the development of the physical sciences, that is, ideas are generated from a theory base (often quite incomplete) and these are tested out by creating a context

within which the theorised mechanism is most likely to be observed acting. Constraints are put on the conditions of the experiment to generate the desired mechanism in action and try to disable any extraneous factors. In this way, the researcher is trying to move the system out of equilibrium to provide the ideal conditions under which the theorised mechanism can operate. Often partial effects are observed and the researcher uses this knowledge to generate a more refined version of the theory/mechanism under study and by a series of iterative developments, clearer knowledge about the operation of the mechanism is generated (Pawson, 2003).

In relation to the social sciences, Pawson and Tilley (2000) suggest that the realist researcher is looking for regularities or patterns in social phenomena as the main outcome of the research. This is reminiscent of the work by Wolfram with patterning of cellular automata, referred to in Chapter 2, p.49, who indicated that seeking regularity in information is an exercise in efficiency, in that it discards redundancy in data (Wolfram, 2002).

Pawson and Tilley use the formula:

$$\textit{Regularity} = \textit{mechanism} + \textit{context}$$

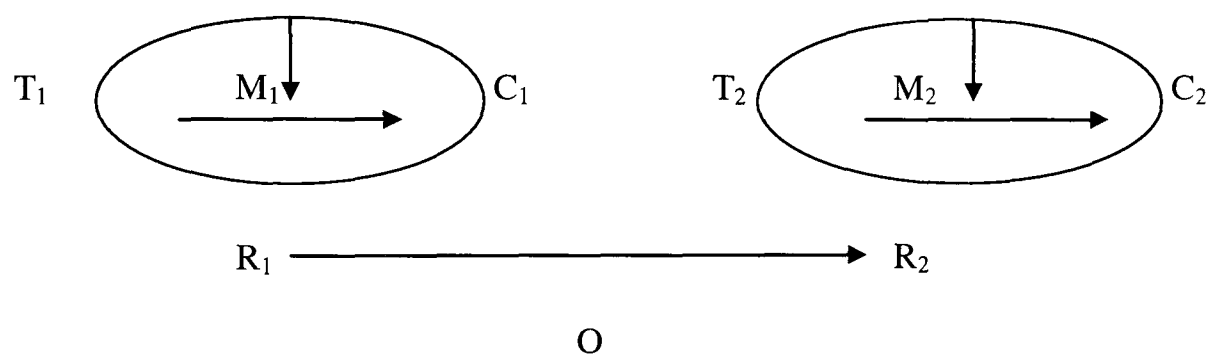
to help guide the task of the realist social enquirer.

Since most social interventions are concerned with change, the goal of the realist evaluator is to clarify the programme mechanisms which lead to the transformation from one set of social circumstances to (hopefully) a new set. They also stress the importance of clarifying

how the contexts (within which the mechanism is trying to operate) influence the ability of the mechanism to cause and maintain a transformation.

They use the following diagram to illustrate their view of the processes involved in change:

Diagram 1 Transformation in Social Systems (adapted from Pawson and Tilley)



Legend:

T – time at points 1 & 2

C – context at times 1 & 2

M – mechanisms operating at times 1 & 2

R – regularities observed initially and at time 2

O – outcome

By reference to this diagram it can be seen that the regularities observed (R_1) at time (T_1) and being maintained by the mechanisms (M_1) can be transformed by the mechanism (M_2) (the programme) operating at (T_2) which of itself can transform the context from (C_1) to (C_2) within which the new regularities (R_2) are observed.

Realist researchers still follow the traditional cycle of research design by:

- starting with theories and elaborating mechanisms(M), contexts(C) and outcomes(O)
- developing hypotheses about which aspect(s) might lead to change
- carrying out observations, multi-method and matched to M,C,O
- determining what works and for whom (rather than generalisation)

(after Wallace quoted in (Pawson & Tilley, 2000))

Within this research paradigm, the participants in the programme are considered agents of change, they are not passive recipients of externally imposed controls. The programme can be construed as potentially offering the participants new choices. By making choices, the participants in the programme can determine the course of their experience of the programme.

It can also be seen that the critical realist approach to evaluation has parallels with complexity theory as outlined in Chapter 2, section 2.1.4, p.48. The mechanisms operate in an iterative manner, sustaining the new system position by virtue of the feedback from the system. The arrows shown in the diagram above for (M_1) and (M_2) would be more

accurately drawn as recursive loops ‘rather than straight’ lines to illustrate this feedback. Programmes ‘push’ social systems, which are open systems, away from equilibrium and are focussed on the mechanisms which cause change, observable or not, rather than just the change itself.

‘ A realist analysis of causality takes place within a complex open system, that is, synonymous with social systems’ (Wilson & McCormack, 2006, p.48)

Of particular merit in critical realism is the further focus on transferability. Since context and change of context form part of the analysis, it is possible to transfer not just data, but ideas between contexts (Wilson & McCormack, 2006).

3.3 Method

This section describes in detail the approaches taken in addressing the evidence available, clarified, collected and analysed in relation to the PAVE evaluation.

3.3.1 Initial survey of data sources.

As indicated previously, the evaluation of PAVE was a negotiated enterprise between the managers of PAVE, both operational and strategic, and the researcher. The researcher had a vested interest in PAVE since it was his idea originally which brought the concept to Midlothian Council. He continued his interest as a member of the Admissions Group which met on a biennial basis for the two main intakes of candidates for PAVE. He had no other operational role with respect to PAVE except on an occasional ‘case’ basis when a candidate

for the programme was, or had been, known to the researcher in his role as educational psychologist and support was requested by PAVE staff.

An initial survey of the information available for the evaluation indicated that PAVE staff kept many differing types of record for each participant during the programme. However, although partially systematic, it tended to be reactive. Table 3 below indicates the nature of the data identified in this initial trawl.

Table 3 Potential data for evaluation

<u>Data type/nature</u>	<u>Availability</u>	<u>Source</u>
PAVE student-name, d.o.b., address, parent contact	all participants	PAVE; school
Prior School	partial	cross reference to school database
Prior attainments	partial	limited school data
Prior Attendance	all participants	school (accuracy?)
PAVE attendance	all participants	PAVE; school (accuracy?)
PAVE timekeeping	all participants	PAVE
Qualifications PAVE (SQA; ASDAN)	all participants (except early leavers)	PAVE; Outreach Service
Supports Needed (e.g. extended 'keyworker' involvement)	partial	PAVE
First destination after PAVE (at 6 months)	partial	PAVE; careers
Longer term destination after PAVE (after 6 months)	very limited	PAVE; careers
Children's panel involvement	partial	PAVE; Reporter

As can be seen from the table, much of this data was either inconsistently gathered or maintained, for example, although PAVE staff knew at the time of referral to the programme what school the young person had most recently been connected with, this information was not recorded in the young person's PAVE record. The justification for this was that the young person was not expected to ever re-attend that school, but on completion of PAVE move on to a post-school position – either work, further education or training.

This lack of recording was even more surprising when it was noted that the young person was maintained on the roll of their most recent school while participating in PAVE and the staff at PAVE sent current PAVE attendance figures to that school for the school's records. As was discovered, and as discussed later, the schools did not always record this attendance information accurately.

The following table summarises the data which was used in the evaluation.

Table 4 Actual Data Used for Evaluation

Purpose	Group size
Analysis of attendance (2000 –2005)	N = 91
Analysis of Post-School Destinations (1998 – 2005)	N = 191
Analysis of PAVE attendance and first Destination (2000 – 2005)	N = 89
Detailed analysis of participants' views (Summer and Winter Leavers 2005)	N = 11

3.3.2 Historical Data

Despite this rather inconsistent approach to record keeping, PAVE staff did maintain clear records of the attendance of each young person while at PAVE. There was also a reasonably well-kept record of the young person's first destination after leaving PAVE. This did require to be updated, and, after some negotiation with the careers officer who took a particular interest in the PAVE programme, this information was made more complete (specific numbers are given in Chapter 4).

It was considered that the above data sources would be a good starting point to examine the historical data over a number of years and give one potential measure of the effectiveness of re-engagement of the young people with adult led structured programmes. The destination data was of particular interest in trying to establish if there was any possibility of sustainable outcomes for the young people associated with re- engagement in adult led structures.

3.3.3 Specific design considerations.

Research Question A - Does PAVE successfully engage young people who are disaffected with school?

Does PAVE have any effect on attendance figures for the young people? To give any gauge of the ability of the programme to re-engage the young people with adult led structures, it was necessary to know what their individual attendance had been prior to attending PAVE. Midlothian Council did maintain an electronic database of school pupils, but it was school based, and could not be interrogated centrally. This meant that copies of each of the six

secondary school databases had to be transferred on to spreadsheets and housed on a central server. These lists of student name, last school attended, d.o.b., address, attendance (years 1 – 4), could not be combined for technical reasons and were not amenable to any form of normal electronic query system and were therefore interrogated manually.

To give a reasonable indication of the robustness of any differences in attendance brought to light, it was decided to survey data from attendees at PAVE from the years 2000 to 2005. This covered 12 separate groups, a Winter and Summer Leavers group from each year.

Each young person's school attendance for the year prior to commencing the PAVE programme was compared with their attendance at the PAVE programme. This measure was considered to be a reflection of the ability of the programme to re-engage (or otherwise) the young people in an adult led structured experience. The sample comprised 91 young people for whom complete attendance figures, at PAVE and at school, were available.

Research Question B - Are the young people who have experienced PAVE diverted from becoming part of the NEET statistics?

How do first destinations after PAVE compare with national figures? Given the discussion in Chapter 1, pp.20 - 21, regarding the characteristics of the NEET group and young people who become part of a process of disaffection from adult led environments, any indication that the PAVE attendees had reduced their tendency to disaffection by not becoming a NEET statistic should have been a positive indicator for PAVE. Data was available on

almost all PAVE attendees from its initiation in 1998. The careers officer, as indicated, had managed to update first destination figures for most of them. These figures were broken down into the following categories:

Unemployed

Further Education Course

Attained a Job

No Record

This allowed a comparison with the figures collected nationally for the Scottish Executive in their determination of the NEET statistics, council by council. Any interaction between attendance and first destinations after PAVE were also explored.

Research Question C - If PAVE ‘works’, what particular features of the programme make it work?

- a) Are the young people’s self perceptions changed by attending PAVE?
- b) Do the young people have similar views of their situation at entry to and exit from PAVE?

As indicated previously, it was considered essential to seek the views of the young people as they joined PAVE and at the conclusion of their programme. This was carried out by use of an individual structured interview. Two questionnaires were used to structure the interviews - one for entry to the programme and the other at exit from it. The cohorts which engaged in this part of the study comprised the Summer Leavers group 2005 and the Winter Leavers group 2005. The purpose and design of each of the questionnaires are described below.

Entry interview; n = 9; (interview schedule - Appendix 1, pp. 234 - 238)

This questionnaire comprised two sections. Section 1 dealt with background to the young people's experiences prior to PAVE. Part two dealt with their earliest knowledge and experience of PAVE through to and including their induction into the programme.

Since the young people referred to PAVE were viewed as 'disaffected' by the professionals referring them, part one of the questionnaire was intended to provide a gauge of the nature and extent of this 'disaffection' and how the young people experienced school. This would allow some indication of the task which PAVE staff had in trying to create a context suitable to help the young person deal with their disengagement from an adult structured environment such as school.

Section one involved asking the young people about their:

- views of school from a variety of perspectives
- views of their social life outwith school
- family circumstances

Section 2 was intended to elicit information about the young person's earliest perceptions of PAVE and their expectations of what it might involve. Given that PAVE was intended to be part of a positive transition for young people who were disengaged from school and adult led support structures, the transition into a new context was considered worthy of some detailed study. The interview finished with a question about the current aspirations of the young person.

The questions were structured on the following lines:

- factual questions to encourage the young person to engage in the interview
- open questions which try to gain their personal views and opinions on, for example, their early experiences of PAVE
- specific prompts which either invited further elaboration on the open questions, or if 'stuck' some more specific factual questions. These prompts were only to be used where necessary
- Four rating scale questions (scale of 1 – 10) were included in section one to give measures of the strength of view of the young person regarding their achievements at school and their views of subjects and attendance.

This form of structured interview utilised the advice on questionnaire construction regarding the type of information being sought and the circumstances under which it was being sought (Cohen *et al.*, 2000). However, rather than view the whole structured interview as one type as determined by the questionnaire, that is:

- fixed alternative
- open-ended
- scale

the questionnaire used a variety of approaches as indicated to elicit information of both a subjective nature and quantifiable measures of the young people's views.

Consistent with the realist approach, the structuring of the interview was a clear constraint on the interaction between the interviewer and young person. This was intended to generate

the outcomes being looked for, that is, some measure of the young person's prior views of school and early views of PAVE, rather than an attempt at a co-constructed narrative of their current and recent experiences. This limited the extent to which themes could be derived from the young people's responses because these were not completely open-ended.

A particular rating scale question was included in section one of the questionnaire which tried to tap into the young person's perceptions of their own successes at school and how others may have viewed this success. Since major influences on young people's developing views of themselves are influenced by peers, parents and teachers, the rating scale sought the young person's perceptions as reflected by these groups in addition to their own self-perceptions. This form of question was repeated in the exit questionnaire to ascertain any significant shifts in these views for each young person.

Exit Questionnaire; n = 7; (Interview schedule - Appendix 2, pp. 239 - 244)

The second structured interview took place at the conclusion of the young person's time at PAVE, either in their final week or in the week immediately after (some were already established in another course or in a job).

The questionnaire used as a structure and prompt for the interview was in three sections. The first focussed on the young person's experience of their work placement and was subdivided into two parts. The first part sought their views on the utility of the work experience for them, the second on their enjoyment of the experience. This was an attempt to split the informative aspect from the emotional aspects of the work experience. This split allowed the

young person to indicate if they had enjoyed the experience and, separately, whether they found it relevant to their developing ideas of work in the longer term. It could also be that the young person found the work informative and helpful in developing their skills, but not particularly enjoyable (for example, deciding that working with young children was more frustrating than they initially had imagined).

The second section was similarly structured, splitting utility and enjoyment and related to their experience of the educational/classwork aspect of PAVE.

The third section sought their views about how well they had managed at PAVE and used a rating scale approach similar to the entry questionnaire to offer comparison of perceived changes, relating again to themselves, teachers/instructors, peers and parents. It sought their views on how PAVE could be improved, how they considered that they had changed and their aspirations for the future.

The structured interviews for the Summer 2005 cohort were carried out by two educational psychologists, one of whom was in the process of post-graduate training, not necessarily interviewing the same young person at entry as at exit. The advice given to them was to use the questionnaires as outlined above:

- engage the young person and get them talking
- use the open ended questions to keep them talking and record as accurately as possible their views

- use prompts or follow-up questions only where the young person was having difficulty in responding

Prior to the interview the interviewers explained to the students that the questions in the interview related to their personal experience of school and early impressions of PAVE, and some general questions about them and their views. It was further explained that the purpose of the study was to help improve the transition from school to post-school provision for young people, and that their views would help shape that process. They were assured that their views would be treated as confidential and would not be ascribed to them personally in the study report. Each young person was invited to take part, and could refuse if they wished. All of the young people asked by the interviewers took part.

The Winter leavers in 2005 were similarly interviewed both at entry to and exit from PAVE using the same 2 questionnaires to structure the interviews, with advice given as above. The interviews were carried out by a key worker linked to the programme but not employed by the programme (n = 12 entry interviews; n = 8 exit interviews).

An issue arose regarding the quantity of data available for analysis. Although 25 young people were interviewed across both Summer and Winter leavers for the 2005 cohort, only 11 of these completed both entry and exit interviews. The reasons for this lack of overlap included, among others:

- Young people starting the programme not completing it
- Young people from a waiting list joining the programme late, filling vacated places

- Completion of the programme early to take up offers of employment

The first of these reasons regarding the early drop out from the programme led to a more detailed study of this phenomenon and is discussed in the subsidiary question in more detail below. The second reason simply led to lost data. The third issue was partially addressed by PAVE staff telephoning the young people and inviting them back for an exit interview, some of whom accepted this offer.

Subsidiary question: What caused this dropout rate at the beginning of the programme?

Although not part of the initial plan of the evaluation, the unexpectedly high early dropout rate from the programme gave rise to considerable concern. Despite being considered appropriate for the PAVE, a significant group of young people were not engaging with even the initial part of the programme. This study was reported in detail elsewhere and only the summary points are referred to here.

The design of the entry questionnaire had included several questions about the young person's views of their introduction to PAVE. Analysis of their responses to these questions highlighted that the intended procedures for the transition of the young people into PAVE did not have adequate safeguards to ensure their informed consent when they were referred to the programme. Nor did the young people have a clear perception of what PAVE had to offer them as prospective participants. The worst distortion of the procedures by referring staff (usually school staff) resulted in some young people arriving at PAVE for their individual interview with no knowledge of the project or why they were expected to attend

for interview. How this was addressed and the outcomes related to this is discussed further in Chapter 5, p. 214 - 216.

3.3.4 Approach to analysis of responses from structured interviews

Despite the different time of the academic year and the differing ages of the two cohorts of young people from Summer to Winter leavers, the concordance of the groups' responses to the questions and prompts were of note. Two educational psychologists independently analysed the responses for common themes with a high level of agreement on themes derived from the analysis. Each psychologist used a slightly different method of establishing common themes in the responses. The responses from all 11 young people were first collated into groups under each question. By examining these grouped responses, each researcher tried to identify any common themes in the young people's views. The methods used were as follows:

Researcher 1

- Mark the first identifiable statement within the first student's response to the first question with a coloured highlighter
- Scan each student's response to that question for a similar style of response
- If similar response identified, highlight it with the same colour
- Check for other aspects identifiable in the first response by the first student, for example, positive or negative attribution, highlight this in a different colour for each positive or negative

- Check through each student's response to the same question for similar attributions, highlight these in the second and third colours
- If a different aspect was stated within the first students' response to the first question, highlight in a fourth colour
- Repeat scanning the other students' responses to the same question for a similar theme and highlight this with the fourth colour
- When all of the first student's response to the first question had been highlighted in some manner and the other student's similar responses highlighted in the same colour, the second and subsequent students' responses to the first question were scanned for any unmarked/uncategorized responses and the above process repeated until all first question responses were categorised
- This process was repeated for each set of responses to each question in turn until all responses to all questions had been categorised.

As an example, Question 2, Section1 of the entry questionnaire asked the young person to 'Tell me a little about your experience at High School'.

Student 1 responded:

'Had to find work experience or come here. Didn't like school. Got on well with teachers. Boring'.

'Didn't like school' and 'Boring' were taken as 2 responses reflecting a dislike of the subject matter at school highlighted in solid yellow. This identified 'subjects' as a potential theme and also a negative attribution towards these 'subjects'.

'Got on well with teachers' was taken as 'relationship with teachers' as a potential theme and the indication of a positive attribution to this relationship and highlighted as a thin pink line.

Student 2 responded:

'I find school boring' - this was highlighted in solid yellow as another negative attribution to the 'subject' matter at school.

Colour was used to identify potential themes, thickness of the colour used to indicate positive or negative attribution.

Researcher 2

- Take all collated responses to all of the questions in groups and scan them visually for a potential theme
- Mark the first identifiable student response which makes that theme explicit with a highlight colour
- Sift through each response for each student on all of the questions in turn, highlighting any reference to this theme
- Repeat the above process to identify a second theme and mark it with a second colour and sift through all un-highlighted responses in turn and highlight on this second theme
- Repeat this process until all responses to all questions have been highlighted.

This researcher using the example above would have identified 'boring' in relation to schools and subjects as a potential theme along with other similar statements and then marked each similar response on that theme until all such responses were highlighted.

Researcher 1 used a 'focus and systematic search' strategy within each question response set, taking each question in turn. Researcher 2 used a 'scanning across all questions' responses' strategy to identify potential themes and rigorously checked across all question responses. Both researchers noted early in their search strategies that the young people frequently made it clear whether they were ascribing positive or negative elements to their views, for example, 'Got on with...'; 'Enjoyed PE'; 'Teachers were supportive'; 'practical subjects were OK', and 'boring'; 'crap'; 'didn't like....'; 'unfairly treated'.

Dependent on the nature of the question and prompt used, there were differing aspects assigned to each response. However, the common pattern seemed to be established that there would be a factual/task-specific/general comment from the young people and, where appropriate, additionally a personal comment. As indicated a positive or negative element was usually associated with each response. The above procedures were applied to all of the young people's responses in turn for both entry and exit questionnaires.

When the findings were brought together, there was a high degree of concordance between the two 'markers'. As a check on the consistency of marking for themes, Entry Interview, Section 1, Question 2, was a general open-ended question about school experience and responses to it were compared in some detail. The only difference identified was that the

method used by the first researcher split one theme into 'Teachers' and 'Subjects', whereas the second researcher had combined these as one theme of 'Teachers and their Subjects'. The meaning and 'labelling' of the other themes and the positive/negative elements were the same. The structure offered within the interview by the questionnaire format clearly helped maintain consistency in the young people's responses.

The thematic analysis is described in two parts. A first level analysis is undertaken and reported in the Results Chapter, Section 4.2, p. 171. This analysis indicates whether there were any statistically significant differences in the types of responses made by the young people. For example, did responses indicate a predominantly positive or negative view on a topic? This helped establish whether clear themes emerged, as opposed to random responses to the questions and prompts to the young people in the structured interviews.

In Chapter 5, Discussion of Results, p. 186, the derived themes are illustrated and discussed in more detail to give a clearer picture of the young people's collective views of their experiences both at school and PAVE and their transition from one to the other.

3.3.5 Ethics and issues arising

The young people were free to give or withhold informed consent in the process of structured interviewing. Appendix 5, p.251, illustrated that several young people, both Summer and Winter Leavers, opted out of the interviews. All participants were assured of the anonymity of their responses. Appointments had been set for all of the available young people. Some of them had already opted out of the Entry structured interview by not starting at PAVE. However, these young people were contacted by telephone by the PAVE staff to offer them an opportunity to participate in the interviews to give the staff some feedback as to their failure to attend. As can be seen from the gaps in the table in Appendix 5, many declined this offer. The issues raised by this for the study have been addressed above in Section 3.3.3, p. 130.

The absence of respondents for the Exit structured interviews appeared more to be an illustration that the young people during their final week at PAVE were involved in literally moving on to another context – either work, further education college or further training. Several of the young people returned to PAVE for their exit interview when invited to by PAVE staff.

The quantity of data gleaned from the interviews is indicative of the quality of the rapport established between the interviewers and the young people. As indicated by Cohen, the interview process must be seen as a social, interpersonal encounter, not merely a data collection exercise (Cohen *et al.*, 2000) . The honesty and transparency with which these young people responded to the structured interviews, as evidenced by the mix of positive and negative responses and hard hitting vernacular (for example, ‘crap’), is a good indicator that

the young people regarded the interviews as positive social encounters. Despite generally having very positive views about their experiences at PAVE, they were also quite clear about what they did not like, as evidenced by their responses to the Exit Interview, Section 3, Question 3 (see p. 184). There were no hidden motives in the questions used as prompts.

All of the young people were offered a copy of the completed report (the shortened version of this study written for Midlothian Council), and this was posted to those who accepted this offer.

Having started with a large quantity of potential data for the evaluation, the main tasks were structuring available data and clarifying it such that it was fit for analysis. The value of seeking the views of a small number of participants regarding their experiences not only of PAVE, but also of the transition process into PAVE, produced a further dimension for the analysis and added considerably to the evaluation.

Chapter 4 Results and Analysis

This chapter describes the findings from each area of the evaluation and provides a first level of analysis of the results.

4.1 Introduction

As described in Chapter 3, there were two approaches taken to collecting and analysing data on the research questions.

Research Question A: Does PAVE successfully engage young people, previously disengaged from school, who have been referred to the programme?

Research Question B: Are the young people who have experienced PAVE diverted from becoming part of the NEET statistics?

A quantitative confirmatory approach was used to address these as outlined below under headings 4.1.1 and 4.1.2.

The second approach utilised the data from the young peoples' structured interviews and sought to clarify the mechanisms which may be relevant to any effectiveness demonstrated by PAVE, that is:

Research Question C: If PAVE 'works', what particular features of the programme make it work?

The results and analysis under headings 4.1.3 and 4.1.4 address this question.

Following the order outlined in the methods section of Chapter 3, the results are listed under the same series of headings and questions.

4.1.1 Research Question A - Attendance at PAVE and prior school attendance

Does PAVE have any effect on attendance figures for the young people? A comparison of attendance figures for young people at PAVE with their attendance at their last full year at school was carried out for previous PAVE trainees (years 2000 – 2005) for whom complete attendance figures at PAVE and school were available (n = 91). The assumptions associated with the measurement of attendance figures from a secondary school population were:

- a) The attendance figures for each student are independent of each other
- b) The data is at least on an interval scale
- c) The observations are drawn from a normally distributed population.

The parametric statistic of a t-test of paired observations and Cohen's measure of effect size, calculated using the gain scores at post-test expressed as a proportion of the pooled pre and post-test standard deviations, were therefore considered appropriate to be applied to the data. Table 5 shows the results. For the cohorts of students, 2000 – 2005, there was a positive improvement in attendance at PAVE compared to their prior school attendance.

Table 5 Comparison of prior school and PAVE attendance (n = 91, both genders)

	School Attendance Number of ½ day sessions	PAVE attendance Number of ½ day sessions	Effect size Cohen's 'd'
Mean	63.52	71.58	
Standard Deviation	22.46	21.32	
t-test, paired scores	p = 0.0044	2-tailed	0.36

The improvement in attendance at PAVE compared to prior school attendance was significant and the null hypothesis was rejected (t-test on paired observations, $p < 0.01$), raw data and calculations are listed in Appendix 3, p.245. As indicated in Becker (2000), the effect size of $d = 0.36$ is a modest positive indicator of a statistically significant improvement in attendance while participating in PAVE.

Given that poor attendance is a major indicator of disengagement from school among this group, participation in the PAVE programme indicated that there was some success in retrieving some of these young people and re-engaging them in a purposeful adult-led programme. Further discussion of this and the data accuracy on attendance is undertaken in Chapter 5.

4.1.2 Research Question B - First destinations after PAVE

How do first destinations after PAVE compare with national figures? The careers officer who had been assigned to PAVE over a number of years had tried to record the first destinations for all of the young people who had participated in PAVE from 1998. Data was not available for all of these young people despite the fact that he had updated it as indicated in Chapter 3. The prior participants in PAVE for whom data was available were again first taken as a composite group of boys and girls ($n = 191$) and the data shown in Table 6:

Table 6 Analysis of First Destinations for PAVE participants 1998 – 2005 (n = 191)

Destination	Number	Percentage
Unemployed	29	20.9%
Further training and/or Education	79	56.8%
Attained a Job	31	22.3%
No Record	52	Not included for calculations

(This latter figure for 'No Record' mainly pertained to the years 1998 and 1999 where the programme had had difficulty due to long-term staff illness and several temporary staff covering the education component.) Given that all of these young people had been deemed 'disaffected' by their schools (the main criterion for referral to PAVE), the 20.9% figure for 'unemployed' is a little higher than the figure of 15.6% in the Scottish NEET statistics for all young people in the 16 – 19 age group who have left school in Midlothian Council (Executive, 2006a). As a check that the young people who had attended PAVE over the years sampled were no more likely to become unemployed than the larger Midlothian group of young people of similar age, a comparison of the two samples was undertaken using a chi square analysis. The result is shown below in Table 7. The null hypothesis could not be rejected at the 5% level of probability, suggesting that the students who attended PAVE were no more likely to be unemployed than the rest of the 16 – 19 population in Midlothian.

Table 7 Comparison of post-PAVE unemployment figures with Midlothian unemployment figures for 16 – 19 yr age group

	Unemployed	Other	
PAVE	29	110	139
Midlothian	1000	5410	6410
	1029	5520	6549

($\chi^2 = 2.46$, $df = 1$; H_0 not rejected; $p = 0.117$, two tailed test)

(The ‘Other’ category includes all other outcomes for young people post-school)

Further discussion and analysis of the PAVE statistics in comparison to Scottish national statistics (see Chapter 1, Section 1.3, p.25) is undertaken in Chapter 5.

The finding of a modest effect size (Cohen’s $d = 0.36$) above (Table 5, p.147) comparing attendance at PAVE with prior school attendance resulted in consideration that gender should be included in the analysis of first destinations. The prior participants in PAVE for whom data was available on:

- PAVE and prior school attendance
- Gender
- First destinations after PAVE

was $n = 83$.

It was decided to analyse the relationship between first destinations after PAVE and change in attendance, school to PAVE, for combined and separate genders. The outcomes:

- Further Education/Training (F)
- Employment (E)
- Unemployment (U)

were considered to be ranked best to worst respectively in terms of quality of outcome. This follows from the discussion in Chapter 1, Section 1.3, p. 25, which indicates that moving from school directly into employment at age 16yrs. does not appear to lead to sustainable long-term futures for young people. Descriptive statistics for attendance at school and PAVE are shown in Tables 8 & 9. There was a modest but statistically significant association between school attendance and attendance at PAVE ($r = +0.283$, $p = 0.009$, 2-tailed test):

Table 8 Descriptive Statistics: Attendance, School and PAVE - Both Genders

	N	Minimum	Maximum	Mean	Std. Deviation
School	83	12	100	64.27	23.053
PAVE	83	18	99	71.73	21.933

Table 10 shows the descriptive statistics for each of the three destinations by gender.

Table 9 Descriptive Statistics: Dependent Variable, School Attendance

Destination	Gender	Mean	Std. Deviation	N
E	Male	66.31	20.101	13
	Female	57.40	18.887	10
	Total	62.43	19.665	23
F	Male	65.56	24.259	34
	Female	54.00	28.491	9
	Total	63.14	25.291	43
U	Male	74.33	24.708	9
	Female	64.25	18.038	8
	Total	69.59	21.783	17
Total	Male	67.14	23.243	56
	Female	58.30	21.873	27
	Total	64.27	23.053	83

A 3 x 2 between-groups ANOVA (destination x gender) was carried out on the school attendance data and the results shown with partial eta squared values in Table 10. (Partial eta squared is the ratio of $SS_{\text{effect}} / (SS_{\text{effect}} + SS_{\text{error}})$ and is reported as a measure of effect size (Tabachnick & Fidell, 2007).

Table 10 Summary of Destination x Gender ANOVA: Dependent Variable School Attendance

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2443.117	5	488.623	.915	.476	.056
Intercept	263404.293	1	263404.293	493.062	.000	.865
Destination	993.785	2	496.892	.930	.399	.024
Gender	1685.993	1	1685.993	3.156	.080	.039
Destination * Gender	22.431	2	11.215	.021	.979	.001
Error	41135.052	77	534.221			
Total	386368.000	83				
Corrected Total	43578.169	82				

There were no significant main or interaction effects of subsequent destination or of gender (all p-values ≥ 0.08 , with the corresponding effect sizes accounting for less than 4% of the variance).

A similar analysis was carried out on the PAVE attendance data. Descriptive statistics are reported in Table 11 and details of the ANOVA in Table 12.

Table 11 Descriptive Statistics: Dependent Variable PAVE Attendance

Destination	Gender	Mean	Std. Deviation	N
E	Male	60.62	28.123	13
	Female	67.40	20.876	10
	Total	63.57	24.930	23
F	Male	79.06	17.610	34
	Female	53.00	25.100	9
	Total	73.60	21.880	43
U	Male	78.00	16.031	9
	Female	78.12	13.346	8
	Total	78.06	14.368	17
Total	Male	74.61	21.364	56
	Female	65.78	22.296	27
	Total	71.73	21.933	83

Table 12 Summary of Destination x Gender ANOVA: Dependent Variable PAVE Attendance

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	7457.934	5	1491.587	3.590	.006	.189
Intercept	312924.886	1	312924.886	753.205	.000	.907
Destination	2177.694	2	1088.847	2.621	.079	.064
Gender	662.429	1	662.429	1.594	.211	.020
Destination * Gender	3829.317	2	1914.659	4.609	.013	.107
Error	31990.234	77	415.458			
Total	466558.000	83				
Corrected Total	39448.169	82				

There were no significant main effects of Destination or Gender in relation to the number of PAVE sessions attended. However, the Destination x Gender interaction was statistically

significant ($F_{2,77} = 4.609$, $p = 0.013$, partial eta squared = 0.107) and accounted for some 11% of the variance. This interaction was explored using an analysis of simple effects for Gender with each type of Destination, as shown in Tables 13 to 18.

Table 13 Descriptive Statistics: Dependent Variable Employment

Gender	Mean	Std. Deviation	N
Male	60.62	28.123	13
Female	67.40	20.876	10
Total	63.57	24.930	23

Table 14 Analysis of Simple Effects for Gender and Employment

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	260.175	1	260.175	.407	.530	.019
Intercept	92627.480	1	92627.480	145.017	.000	.874
Gender	260.175	1	260.175	.407	.530	.019
Error	13413.477	21	638.737			
Total	106606.000	23				
Corrected Total	13673.652	22				

There was no significant gender effect and a correspondingly low effect size in relation to PAVE attendance for those who entered employment as a first destination ($F_{1,21} = 0.407$, $p = 0.530$, partial eta squared = 0.019).

Table 15 Descriptive Statistics: Dependent Variable Unemployment

Gender	Mean	Std. Deviation	N
Male	78.00	16.031	9
Female	78.12	13.346	8
Total	78.06	14.368	17

Table 16 Analysis of Simple Effects for Gender and Unemployment

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	.066	1	.066	.000	.986	.000
Intercept	103235.360	1	103235.360	468.843	.000	.969
Gender	.066	1	.066	.000	.986	.000
Error	3302.875	15	220.192			
Total	106887.000	17				
Corrected Total	3302.941	16				

There was no significant gender effect in relation to PAVE attendance for those who became unemployed as a first destination ($F_{1,15} = 0.000$, $p = 0.986$, partial eta squared = 0.000).

Table 17 Descriptive Statistics: Dependent Variable Further Education/Training

Gender	Mean	Std. Deviation	N
Male	79.06	17.610	34
Female	53.00	25.100	9
Total	73.60	21.880	43

Table 18 Analysis of Simple Effects for Gender and Further Education/Training

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	4832.397	1	4832.397	12.972	.001	.240
Intercept	124104.583	1	124104.583	333.137	.000	.890
Gender	4832.397	1	4832.397	12.972	.001	.240
Error	15273.882	41	372.534			
Total	253065.000	43				
Corrected Total	20106.279	42				

There was a significant gender effect in favour of males ($Mean_m = 79.06$, $SD_m = 17.610$; $Mean_f = 53.00$, $SD_f = 25.100$) who went on to Further Education/Training ($F_{1,41} = 12.972$, $p = 0.001$, partial eta squared = 0.240), with a large effect size indicating that gender accounted for 24% of the variance. The small number of females ($N = 9$) compared to males ($N = 34$) should be noted, however.

Both genders relationship between PAVE attendance and first destinations were analysed separately and illustrated in Tables 19 to 24.

Table 19 Descriptive Statistics: Destinations for Females only

Destination	Mean	Std. Deviation	N
E	67.40	20.876	10
F	53.00	25.100	9
U	78.12	13.346	8
Total	65.78	22.296	27

Table 20 Summary of ANOVA for Destination: Females only

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2715.392	2	1357.696	3.192	.059	.210
Intercept	117259.365	1	117259.365	275.654	.000	.920
Destination	2715.392	2	1357.696	3.192	.059	.210
Error	10209.275	24	425.386			
Total	129746.000	27				
Corrected Total	12924.667	26				

The relationship between females and first destinations accounted for a sizeable 21% of the variance, but just fails to reach conventional levels of statistical significance ($F_{2,24} = 3.192$, $p = 0.059$, partial eta squared = 0.210).

Table 21 Descriptive Statistics: Destinations for Males only

Destination	Mean	Std. Deviation	N
E	60.62	28.123	13
F	79.06	17.610	34
U	78.00	16.031	9
Total	74.61	21.364	56

Table 22 Summary of ANOVA for Destination: Males only

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	3322.398	2	1661.199	4.042	.023	.132
Intercept	217902.703	1	217902.703	530.227	.000	.909
Destination	3322.398	2	1661.199	4.042	.023	.132
Error	21780.959	53	410.961			
Total	336812.000	56				
Corrected Total	25103.357	55				

The relationship between males and first destinations is statistically significance ($F_{2,53} = 4.042$, $p = 0.023$, partial eta squared = 0.132) and accounts for 13% of the variance.

Further analysis of the relationship between male attendance at PAVE and their first destination was undertaken.

Table 23 Descriptive Statistics Attendance at PAVE: Males only

Destination	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
E	60.615	5.622	49.338	71.893
F	79.059	3.477	72.086	86.032
U	78.000	6.757	64.446	91.554

Table 24 Post Hoc Multiple Comparisons of Destinations: Males only

(I) Destination	(J) Destination	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
E	F	-18.44 [*]	6.611	.022	-34.79	-2.10
	U	-17.38	8.791	.160	-39.12	4.35
F	E	18.44 [*]	6.611	.022	2.10	34.79
	U	1.06	7.599	1.000	-17.73	19.85
U	E	17.38	8.791	.160	-4.35	39.12
	F	-1.06	7.599	1.000	-19.85	17.73

Post Hoc Bonferroni adjusted multiple comparisons, providing protection for Type I statistical error, revealed that the comparison between Further Education/Training and Employment was statistically significant ($p = 0.022$).

The overall significance of these findings will be discussed in Chapter 5.

4.1.3 Research Question C – Attendance at PAVE and Self-Perceptions

Are the young people's self-perceptions changed by attending PAVE? As discussed in Chapter 1, the purpose of PAVE was to re-engage young people disaffected by secondary school and, by offering them a positive transition experience, help provide them with a positive start to their post-school lives. A necessary aspect of this positive start could be that the young people have a more positive view of themselves as they begin this new phase in their lives. In addition to finding out the young people's views of school and PAVE, the structured interviews tried to ascertain if this was the case. As the question above indicates, was attendance at PAVE successful in achieving this?

In order to answer this, scaling questions in the entry and exit interviews were constructed which elicited both before and after perceptions on how well the young people felt they were managing at those points in their lives. Comparison of any change in these views, from entry to PAVE to exit from PAVE, was therefore possible. Specifically, the responses to the scaling question 3, section 1, of the entry questionnaire, and question 1, section 3, of the exit questionnaire tried to gauge the young person's perceptions of positive change as recognised by themselves, their teachers/trainers, their friends and their parents. For each young person for whom complete structured interview data was available, both before and after PAVE attendance, responses were compared to indicate the extent of the change. The responses are shown as tables in Appendix 5, p. 251 and illustrated as graphs 1, 2, 3, 4 and 5, 6 (pp. 168-170 below).

It was considered that the responses to the questions from the young people could be treated as being on an ordinal scale. Although any one response could not be considered an absolute value, the differences between before and after scores could be ordered or ranked as real differences beyond nominal values. To avoid incorrect assumptions about the underlying distribution of the scores, a non-parametric test was chosen. To check whether there was any improvement in scores on the before and after questions occurring beyond chance, a Mann-Whitney 'U' Test was applied to the data, predicting an improvement in the 'after' scores beyond chance levels. The 'after' scores on the combined Summer and Winter groups on the combined aspects (self, teacher, friend, parent) showed a statistically significant improvement over the 'before' scores ($U = 23$ which is < 25 , therefore H_0 can be rejected, $p \leq 0.01$, in favour of H_1 , one-tailed, $n_1, n_2 = 11$).

As indicated, the size of the group of young people completing both 'before' and 'after' structured interviews was quite small (11 in total across both Summer and Winter leavers). The discovery of such a small number who had attended from the start of the programme through to completion for both Summer and Winter leavers raised two subsidiary questions for the study (see p.138 above). The second of these was as follows:

Subsidiary Question: Could the Summer and Winter Leavers groups be combined to increase the sample size for the purposes of analysis?

The Summer and Winter Leavers groups were composed of young people who were different in several respects. The summer group had attended High School for 3½ years and were following an academic programme leading to Standard Grade external examinations.

Their ages could range from 14yrs 3 months to 15yrs 9 months with an average age of 15 yrs. The Winter Leavers group's ages could range from 15 yrs 5 months to 15 yrs 10 months with an average age of 15 yrs 7½ months. This latter group would already have completed 4 years of High School education and completed their Standard Grade courses. It was considered therefore that the two groups would not necessarily be alike in maturity levels or school experience and could therefore have markedly different perceptions of their experience of school and/or PAVE. As is discussed in more detail later (Section 4.1.4, p.171), the value of being able to combine the responses from the Summer and Winter groups was considered useful in terms of reporting the individual interview findings in a more robust manner.

A test of the Null Hypothesis, namely, that the two groups were samples from the same population in respect of their individual perceptions was devised. A numerical analysis of question 3 in Section 1 of the entry questionnaire was undertaken by listing the answers from each interviewee under headings of Self; Teacher; Friends; Parent(s), for each of the 2 groups (Appendix 4, p.249). The raw scores (Appendix 5, p. 251) were compared within each aspect (heading). If the null hypothesis was not rejected, then the 2 groups were assumed to be samples from the same population. If there were differences between the scores which were occurring beyond the chance level selected, then the null hypothesis would be rejected indicating a better than chance likelihood of real differences between the two groups, necessitating analysis of the responses separately.

Question 3 had a 10-point scale which led to a numerical response. Given that the responses were opinions expressed by the young people, the scales were clearly not numerical at the interval level of measurement. The strength of opinion expressed between a 5 and 6 response, for example, could not be guaranteed to be of the same magnitude of difference between say 8 and 9. The data from the rating scales was considered to be at the level of ordinal data. The choice of test statistic was therefore chosen to be non-parametric to check for significance of differences between the 2 groups on their responses to the rating scales.

The test selected for this comparison was the Kolmogorov-Smirnov Two-sample test. This is essentially a distribution test, the two tailed test used here comparing the groups on measures of central tendency, dispersion and skew. The scores are checked for deviations of their cumulative distributions from each other. If the deviations are large this indicates the sample distributions differ from each other and the null hypothesis is rejected. If the deviations are small then the null hypothesis is not rejected and the samples assumed to be drawn from the same population (Siegel, 1956). Appendix 6, p. 253, shows the calculations for each aspect. On all 4 aspects, the deviations were not large enough to justify rejecting the Null Hypothesis ($p \leq 0.05$). It was therefore an acceptable probability that the 2 groups were being drawn from the same population, and could be combined for the purpose of analysis.

Returning to the question of the change in perceptions for the Summer and Winter Leavers, the graphs do indicate a general increase in positive perceptions, not only of self, but also in the perceptions of what others' views of the young person's ability to manage might be. A comparison of the areas under the histograms (graphs 1 & 2, and graphs 3 & 4, pp. 168 –

169) indicates an increase in general area from before to after attendance at PAVE, reflecting a move in a positive direction of self-percept. Viewing the change in totals only (graphs 5 and 6, p. 170) indicated that, with the exceptions of SR and DM, all of the students reported an increase their positive self-perception. To gauge how large an increase in positive self-perception this represented, a numerical calculation of the Effect Size was undertaken.

As indicated above, the data from the rating scale questions was considered to be ordinal in nature. This precluded the use of the mostly commonly used calculations for Effect Size, that of Cohen's '*d*', or Hedge's '*g*', which both require at least interval data for accurate estimation, relying on means and standard deviations for the calculation, reported by Becker (2000). The calculation of the Effect Size utilised here for these non-parametric scores was that by Vargha and Delaney, (Vargha & Delaney, 2000).

They devised a measure of 'stochastic superiority' for the likelihood that ordinally scaled data from one population (1) was larger than that from a second population (2), depicted as A_{12} . To help interpret the superiority of one population over another as indicated by calculated values of A_{12} , they compared these with the common interpretations of Becker. These are shown as Table 25 below.

Table 25 Comparison of Interpretations of Parametric and Non-Parametric Effect Size

Calculated Values (Adapted from Vargha and Delaney, 2000, Table 1, p.106)

	Effect Size		
	Small	Medium	Large
Cohen's 'd'	0.20	0.50	0.80
A₁₂	0.56	0.64	0.71

An exemplar calculation for the change in self-perception by the young people in the combined group of Summer and Winter leavers is shown in Appendix 7, p. 255, and the findings summarised in Table 26.

Table 26 Probabilities that Exit Self-Perceptions from PAVE are Stochastically Superior to PAVE Entry Self-Perceptions

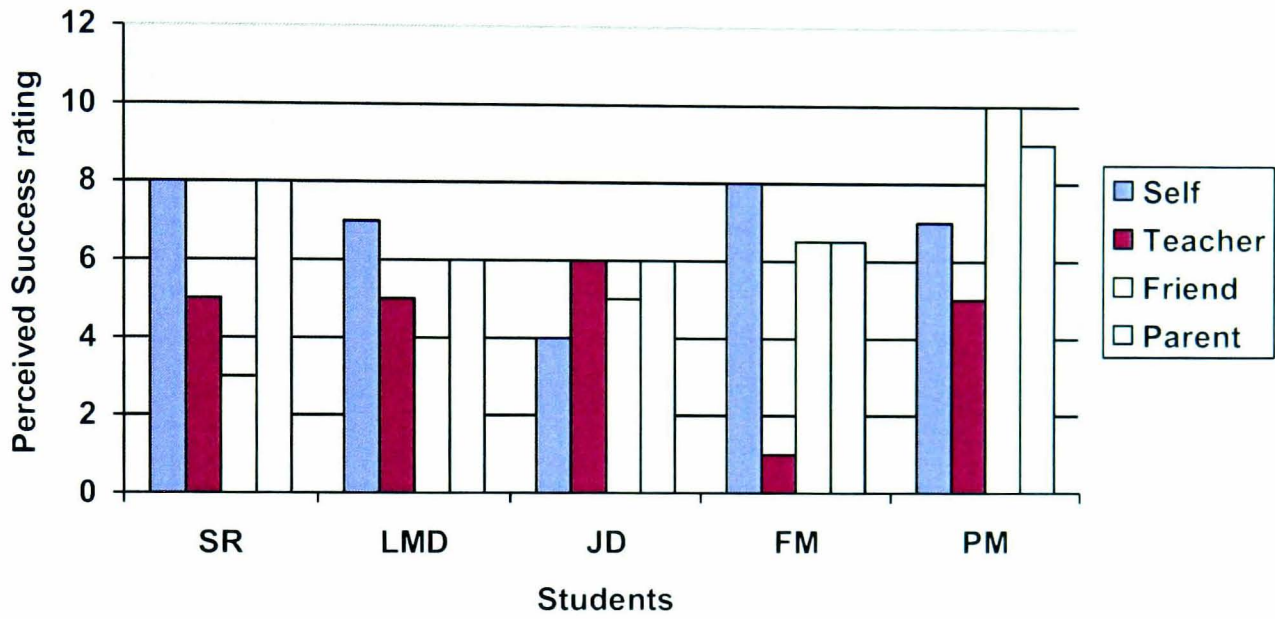
Grouping/ Aspect	Effect Size A _{XE}
Combined aspects	+ 0.80
Self	+ 0.80
Teacher	+ 0.87
Friends	+ 0.51
Parents	+ 0.78

A_{XE} – probability of stochastic superiority of Exit (X) over Entry (E)

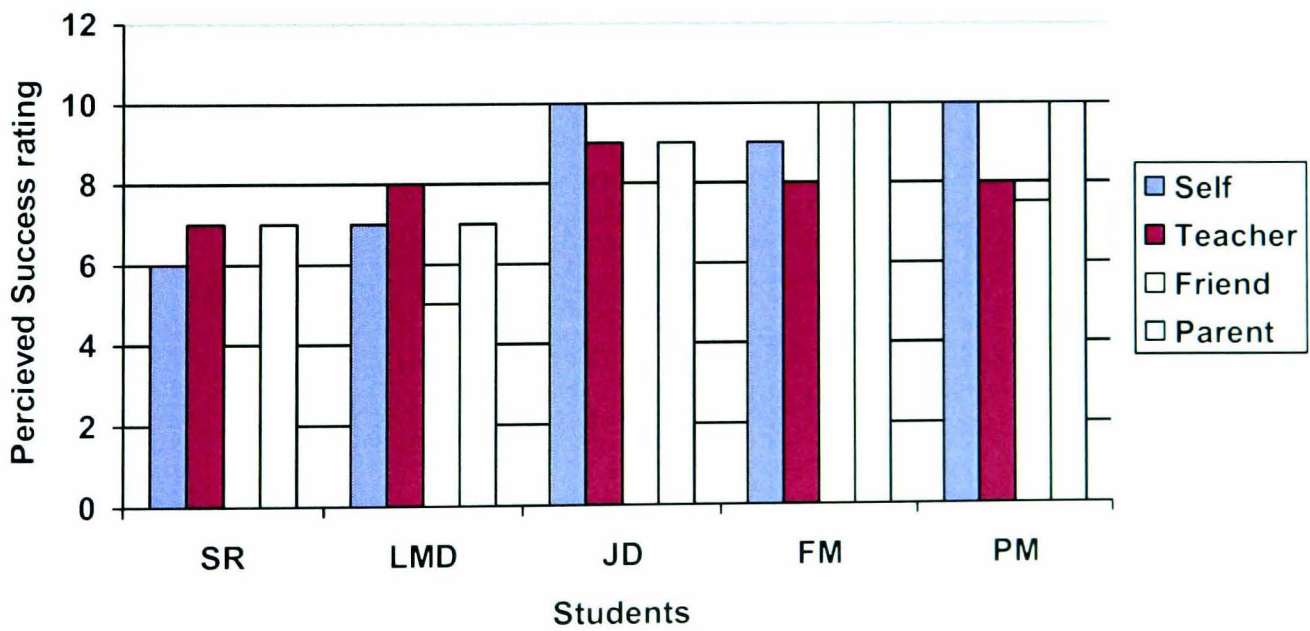
For the combined Summer and Winter Leavers groups and combined aspects, the Effect Size was large and positive ($A_{XE} = +0.80$).

What was also of particular interest was the contribution of each of the aspects, self, teacher/trainer, friend, parent, to this overall perceived change. Comparing the Effect Sizes for each aspect indicated that the young people in PAVE were aware that the people least likely to judge any change in their success would be their peers ($A_{XE} = +0.51$), a medium effect, and those most likely to note a difference would be teachers ($A_{XE} = +0.87$), a large effect, more so even than any difference they would note in themselves ($A_{XE} = +0.80$). This is discussed further in Chapter 5.

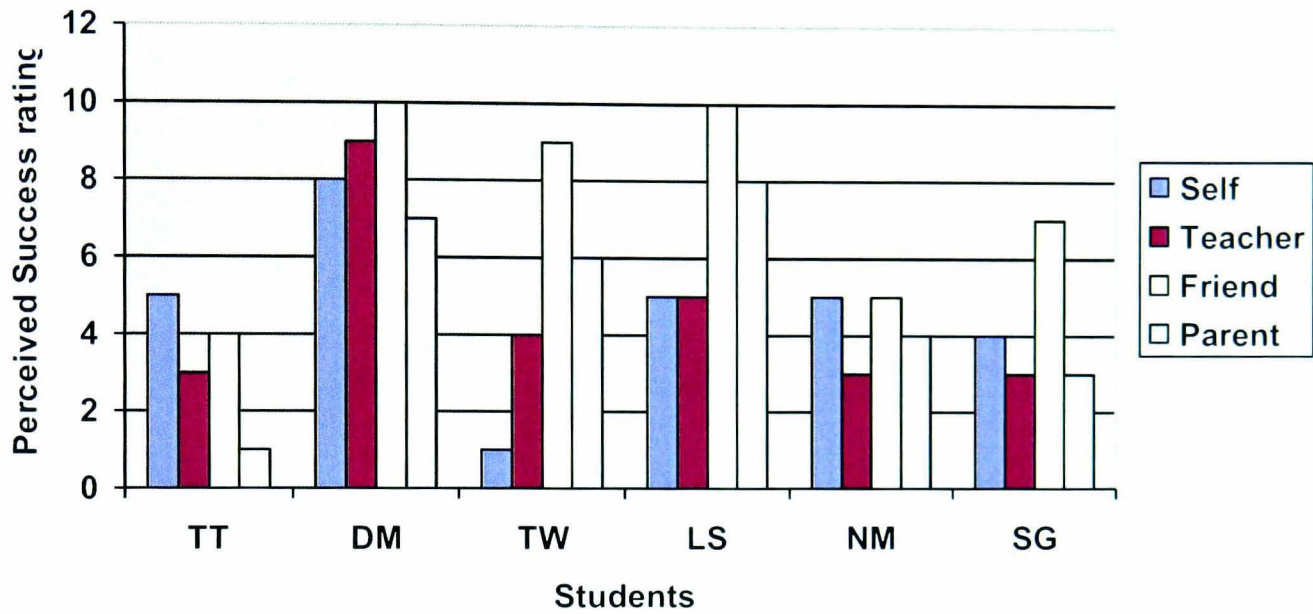
Graph 1
 At Entry to PAVE
 Summer Leavers Section 1 Qu. 3.
 How well do you think you managed (at school) ?



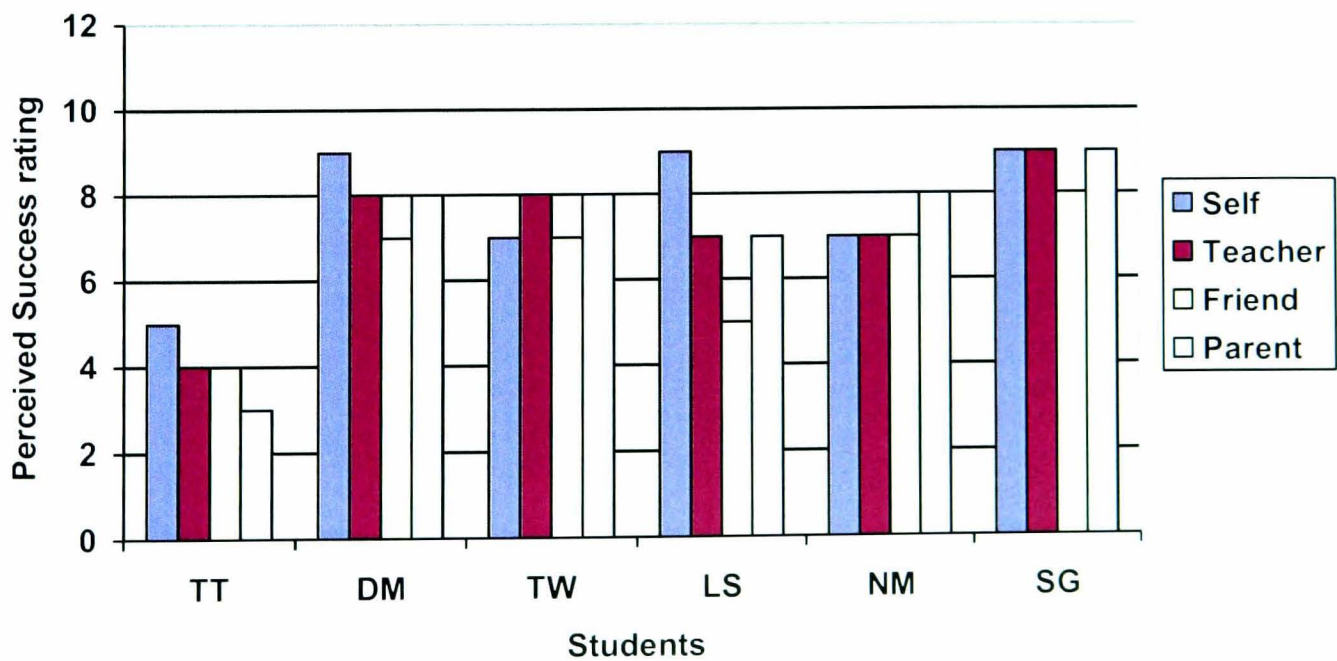
Graph 2
 At Exit from PAVE
 Summer Leavers Section 3 Qu. 1
 How well do you think you managed (at PAVE) ?



Graph 3
At Entry to PAVE
Winter Leavers Section 1 Qu. 3
How well do you think you managed (at School) ?

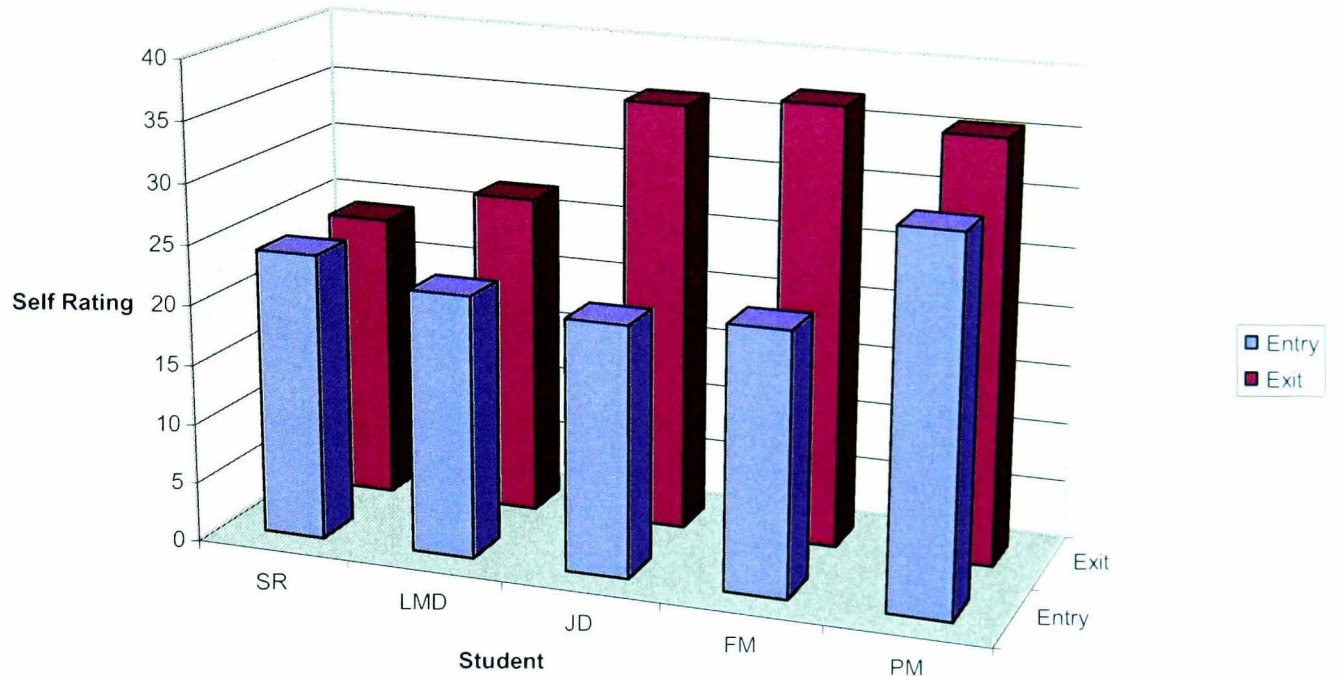


Graph 4
At Exit from PAVE
Winter Leavers Section 3 Qu. 1
How well do you think you managed (at PAVE) ?



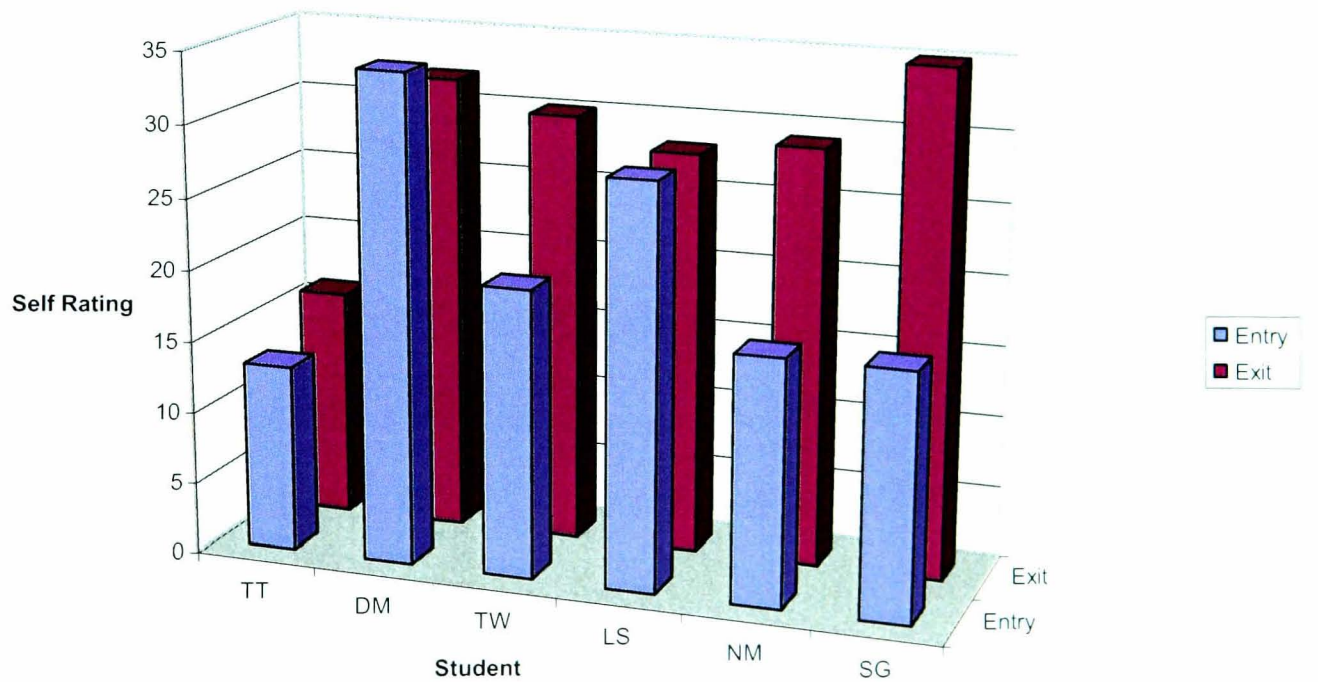
Graph 5

Summer Leavers 2005 Interviews; Grouped Aspects; Sect.1 Qu.3 (entry); Sect.3 Qu.1 (exit)



Graph 6

Winter Leavers Interviews; Grouped Aspects; Sect.1 Qu.3 (entry); Sect.3 Qu.1 (exit)



4.1.4 Do the young people have similar views of their situation at entry to PAVE and exit from PAVE?

To answer the above question, the information gleaned from the non-quantitative parts of the structured interviews was utilised. This part of each of the structured interviews used open-ended questions to encourage the young people to give their views on their experiences of:

- School, family, social life
- Earliest contacts with PAVE
- Specific aspects of the PAVE programme
- Potential improvements to the programme
- What had changed about them since taking part in the programme.

Eleven young people completed both entry and exit interviews and, as indicated above (Section 4.1.3, p. 161, subsidiary question), they were considered to be samples from the same population of young people and their responses were therefore analysed as a single set. Analysing both groups' responses together served to increase the validity of the themes identified from the young people's responses.

4.2 Collation of Structured Interview Responses

This section presents a first level of collation of the responses by the young people on each of the questions from the structured interviews. From collating their responses, themes were derived from some questions where appropriate and, as indicated above, the nature of the questions and prompts used circumscribed the responses in such a manner that these themes could be identified consistently. Some questions requested a rating on a 0 – 10 scale, others a more factual/informative response. The range of responses from the young people to the

rating questions is indicated. Since this was an open enquiry, some young people said more than others, and made a differing number of statements, which resulted in variable numbers of responses on each of the identified themes. This was the situation for all of the open-ended questions.

The following is an illustration of the responses and their groupings on the derived themes for each of the structured interviews. The responses have been grouped in the following tables by the identified themes indicating percentage responses to each question. Where the responses from the young people were given to a rating scale question, these are grouped in a separate table and the mean and standard deviation calculated.

4.2.1 Entry to PAVE – Interview 1

Section 1

Table 27 - Section 1 Responses to Entry Interview - Themes

Question Number	Response by Theme and Frequency	Percentage response (%)
2. High School Experience	Teachers: 3 positive; 11 negative	6%; 23%
	Subjects: 5 positive; 11 negative	11%; 23%
	Rules: 0 positive; 10 negative	0%; 21%
	Peers: 5 positive; 2 negative	11%; 4%
4. Favourite Subject	Practical: 37	72%
	Academic/Desk Based: 14	27%
5. Any Teachers You Liked?	Named teacher: 34	100%
	No teacher identified: 0	0%
8. Family	Intact family, 2 parents: 7	64%
	Single parent/new relationship: 4	36%
9. Activities outwith school?	Negative/unstructured: 11	50%
	Positive/structured: 11	50%

As shown in Table 27 the young people reported a generally negative view of teachers and were particularly unhappy about school rules. There was also a stated preference by the young people for practical subjects as compared to academic/desk based subjects, examples of which were Home Economics, Craft Design and Technology and for academic subjects English and Maths respectively. Despite a generally negative view of teachers, all of the young people could identify, by name, a teacher whom they liked or ‘got along with’. There was a balance of young people who came from single-parent or new relationship families and intact two-parent families. There was also a balance between young people being involved in negative/unstructured activities outwith school, for example, ‘drinking’, ‘hanging around’ as compared to positive structured activities, for example, ‘hunting with dad’, ‘boxing club’.

Table 28 - Section 1 Responses to Rating Scale Questions – Section 1

Question	Mean Rating (0 – 10) Scale	Standard Deviation
6(a) How much did you enjoy favourite subject?	8.5	1.5
6(b) How easy/difficult did you find it compared to others in the class?	7.2	1.6
7. How would you rate your attendance at school?	5.2	3.4

Table 28 indicates that there was a good degree of consistency across all of the young people’s responses to Section 1, with the exception of attendance. Their wide range of opinions did reflect the reality of their school attendance figures, which had a spread from

97% to 47%. From their responses, these young people were making clear choices in their responses to the structured interviews. They held negative views of certain aspects of school and in particular were not happy with teachers (in general), school rules and desk based work.

Section 2

Rather than try to identify themes, this section gave some direct feedback on first experiences relating to PAVE.

Question 1 – ‘How did you first hear about PAVE?’

A variety of responses ranging from ‘Guidance Teacher’ to ‘Education Welfare Officer’ (EWO), ‘Social Worker’ and ‘Friend’.

Question 2 – ‘What did you know about PAVE before you started?’

A range from ‘nothing’ to ‘seeing the DVD’ and ‘reading the leaflet about PAVE’.

Question 3 – ‘Tell me a little about your first visit (to PAVE)’

- a) ‘Who did you meet?’ – main PAVE staff (mostly named).
- b) ‘What did you see?’ - tour of the rooms in education
- c) ‘Where did you go?’ - (this turned out to be a redundant question)
- d) ‘Who did you visit with?’ - range from ‘mum and dad’, ‘Education Welfare Officer’, ‘school staff’, ‘on my own’.

Question 4 – ‘Tell me a little about your interview’ – range from ‘boring’ to ‘repetitive’ to ‘friendly/supportive’ and ‘nervy/scary’.

Question 5 – ‘How did you find out you had a place at PAVE?’ – ‘personal telephone call and letter’. This seemed very positive for the young people.

Question 6 – ‘What were your first impressions of PAVE?’ - almost wholly positive – for example, ‘treated as an adult’, ‘first names’, ‘not in classroom’.

Question 7 ‘To help other young people have a good first experience of PAVE what 3 things would you would change?’ - From ‘nothing’ to ‘more visits’, ‘earlier leaflet’, ‘see more workshops’.

Question 8 – ‘Tell me about your first week at PAVE’ – this seemed generally ‘busy’, for example, ‘filling in lots of forms’ and a few specific complaints about this aspect being repetitive.

Question 9 – ‘What would you most like to do when you finish your placement at PAVE?’ – these were mostly positive, some very specific, for example, ‘job’, ‘college’, ‘apprenticeship’. Only one had ‘not a clue’.

Section 2 responses indicated a very mixed picture of the young people’s knowledge of and early introduction to PAVE. Some aspects were very positive, for example, use of first name terms with PAVE staff, and other aspects distinctly negative, for example, knowing nothing about PAVE and being expected to turn up for an interview there for a placement. These mixed responses gave rise to the separate study noted above (Subsidiary Question, p. 138)

and the changes to the transition for young people into PAVE. This is also discussed further in Chapter 5.

4.2.2 Exit from PAVE – interview 2

As indicated in the Methods section of Chapter 3, this interview sought information from the young people about their specific experiences of the differing aspects of the PAVE programme. Clear themes were again evident partly owing to the boundaries set by the questions. Where positive or negative elements were evident these were noted and counted. The responses and themes are also grouped in tables for themes and, separately, for rating scale question responses.

Section 1(a)

Table 29 - Section 1(a) Work Placement - Usefulness

Question Number	Response and Frequency	Percentage Response (%)
1. Tell me about your work placement	Factual/subject based: 37	79%
	Personally oriented comment: 10	21%
3. Most useful aspects?	Specific Skill reference: 28	74%
	Personal/Social aspect: 10	26%
4. What were the least useful aspects?	Factual/task related: 6	35%
	Positive work oriented: 10	59%
	Negative evaluative comment: 1	6%
5. What would have made it more useful?	Factual/task specific: 5	28%
	Personal inconvenience: 3	17%
	Positive oriented comment: 10	55%

Table 29 indicates that the number of responses from the young people on the work aspects, for example, ‘landscaping’, ‘printing’ to Question 1 exceeded the personally oriented comments, for example, ‘liked people I was working with’, ‘got on well with staff and children’. In Question 3, the young people once again commented more regarding the skill aspect of work, for example, ‘how to use tools’, ‘able to follow instructions’ rather than the personal/social aspects, for example, ‘working as part of a team’, ‘boosted my confidence’. In Question 4, the young people tended to make positive comments, for example, ‘ all seemed useful’, ‘nothing much’, even when invited to be critical of their placements. There was one negative evaluative comment, ‘I felt I wasn’t challenged enough’. There was a broad spread of responses to Question 5 across the categories identified. What was of note regarding these latter responses was the tendency to make positive comments, for example, ‘nothing, ‘everything was perfect’, even when invited to be critical.

Table 30 - Section 1(a) Responses to Rating Scale Questions

Question	Mean Rating (0 – 10) Scale	Standard Deviation
2. How useful did you find your work placement?	7.3	2.0

Table 30 indicates that the young people were clearly focussed on what the work placement experience was about. There were a substantial number of appropriate comments on factual issues which indicated a high degree of interaction with their work placement experience. The experiences were in the main perceived as positive by the young people. Even when questions invited a critical response, positive comments were forthcoming.

Section 1(b)

This section focussed on the young people's enjoyment (or not) of their work placement.

Table 31 - Section 1(b) Responses to Rating Scale Question

Question	Mean Rating (0 – 10) Scale	Standard Deviation
1. How enjoyable did you find your work placement?	7.7	1.5

Table 31 shows that this question seemed to elicit fairly consistent responses of a positive nature.

Table 32 - Section 1(b) Work Placement - Enjoyment

Question Number	Response and Frequency	Percentage Response (%)
2. What were the most enjoyable aspects?	Task oriented: 13	41%
	Social/interpersonal: 19	59%
3. What were the least enjoyable aspects?	Task related: 14	88%
	Social/interpersonal: 2	12%
4. What would have made it more enjoyable?	Task specific: 9	47%
	Social/interpersonal: 3	16%
	Wholly positive: 5	26%
	Specific negative: 2	11%
5. Was your placement better, as good as or worse than expected?	Better: 7	47%
	Matched: 5	33%
	Worse: 3	20%

From the results shown in Table 32, the young people, in the main, enjoyed their work placements. Criticisms were focussed and offered helpful, practical suggestions, for example, ‘more variety’, ‘possibly a bigger shop’. Even when negatively critical, these tended to feature personal inconvenience, for example, ‘long travel in the mornings’, ‘possibly later start in the mornings’.

Section 2(a)

This section was similar to the preceding section, with the focus shifted to the classroom experience of PAVE.

Table 33 - Section 2(a) Classroom Experience - Usefulness

Question Number	Response and Frequency	Percentage Response (%)
1. Tell me about your classroom experience	Factual/subject based: 20	51%
	Social/interpersonal: 5	13%
	Positive evaluative comment: 11	28%
	Negative evaluative comment: 3	8%
5. Most useful aspects?	Factual/subject specific: 20	47%
	General positive comment: 7	16%
	Positive additional comment: 15	35%
	Negative additional comment: 1	2%
6. What were the least useful aspects?	Factual/subject specific: 6	40%
	Wholly positive: 9	60%
7. What would have made it more useful?	Factual/subject specific: 10	48%
	Positive oriented comment: 10	48%
	Specific Negative: 1	4%

As shown in Table 33, there were a greater number of comments relating to the task oriented aspect of the classroom, for example, ‘Maths’, ‘English’, than social/interpersonal, for example, ‘Liked working in small groups’, ‘met new people’. There was also a larger number of positive than negative comments made about the classroom.

Table 34 - Section 2(a) Responses to Rating Scale Question

Question	Mean Rating (0 – 10) Scale	Standard Deviation
4. How useful did you find your classroom time?	7.9	2.0

Table 34 indicates that Question 4 seemed to elicit some variation in the responses to the usefulness of the classroom, although these were largely positive.

These findings were quite surprising in comparison to the young people’s strongly stated negative views about their very recent school experience. The young people found their classroom experience at PAVE very useful and they maintained a task focus. They found the subject matter taught interesting. They also found the approach to teaching conducive to interesting them in learning again and, in particular, the relationships with teachers were positive. This group of findings contrasts sharply with their school experience.

Section 2(b)

This section focussed on the element of enjoyment of the classroom at PAVE.

Table 35 - Section 2(b) Responses to Rating Scale Question

Question	Mean Rating (0 – 10) Scale	Standard Deviation
1. How enjoyable did you find your classroom time?	7.7	1.8

Table 35 indicates Question 1 also elicited some variation in reported views of the enjoyment of the classroom experience, although, again, these were largely positive.

Table 36 - Section 2(b) Classroom Experience - Enjoyment

Question Number	Response and Frequency	Percentage Response (%)
2. What were the most enjoyable aspects?	Subject specific: 7	17%
	Personal positive: 34	83%
3. What were the least enjoyable aspects?	Subject specific: 14	58%
	General positive: 8	33%
	General negative: 2	8%
4. What would have made it more enjoyable?	Subject specific: 9	56%
	General positive: 7	44%
5. Was your classroom time better, as good as or worse than expected?	Better: 19	79%
	Matched: 4	17%
	Worse: 1	4%

Table 36 indicates that the young people, when asked to focus on enjoyment with respect to the classroom focussed more often on personal positive comments, for example, 'having a laugh', 'learning new things' as opposed to subject specific comments for example 'access

to computers, 'doing subjects I like'. With regard to the least useful aspect, the young people were very specific in their comments, for example, 'maths and ASDAN', 'limited movement in the classroom'. However, there were notably more positive comments, for example, 'all enjoyable', 'nothing', than negative responses, for example, 'too difficult', 'not very interesting'. With regard to making it more enjoyable, comments such as 'more girls in the group', 'everything was OK', were broadly spread. The young people made many more comments regarding their expectations of the classroom experience being exceeded.

In addition to the predominantly positive comments from Section 2(a), the young people not only found the classroom experience useful, they also enjoyed it. In the responses to question 5 only one student was disappointed.

Section 3

This section tried to elicit more general comments about the young people's PAVE experience and a chance to reflect on what impact it had on them.

Table 37 - Section 3 General PAVE Experience and Impact

Question Number	Response and Frequency	Percentage Response (%)
2. What 3 things have you liked most about PAVE?	Factual/Subject/Work: 30	54%
	Specific Personal positive: 13	23%
	Positive Relationships: 13	23%
3. What 3 things have you liked least about PAVE?	Factual/Subject/Work: 18	86%
	General positive: 3	14%
4. What 3 things would you like to change about PAVE?	Factual: 15	62%
	General positive: 9	38%
5. What 3 things have changed about you since starting PAVE?	Factual/work related: 15	33%
	Personal/Social: 28	61%
	Nothing: 3	6%
6. Can you tell me what you plan to do when you leave PAVE?	Specific/factual: 8	42%
	Positive general: 11	58%

Table 37 shows that the responses to Question 2 were more in number on the Factual/subject/work theme, for example, 'landscaping', 'new things I have learned', than the specific personal positive responses, for example, 'being more responsible', 'teachers are open, honest, informal, caring' and the positive relationships, for example, 'making friends', 'get on well with young people and staff' in regard to their PAVE experience. This could be

interpreted that, although there is a generally positive attitude towards PAVE on the part of the young people, there is still a practical/work ethic aspect to their views of what happens there. This is also shown in the responses to Question 3. The young people were quite specific about work aspects they did not like and had no inhibitions about stating their views, for example, 'printing', 'the hours of work at my work placement' as opposed to generally positive comments, for example, 'nothing', 'not sure'. Taking both sets of responses to these two questions, when asked to focus on their likes and dislikes about PAVE, the young people at the exit interview stage were very task focussed in their responses in addition to a generally positive overlay.

The responses to Question 4 also tended to support this view. There was no clear difference between the number of things they wished changed, for example, 'days could be shorter', 'classroom too small' and the generally positive responses, for example, 'nothing', 'I would like it to be longer than 6 months'.

There were fewer responses to Question 5 which were factual/work related, for example, 'I've learned interview skills', 'better and more knowledge' than the personal/social aspect of the young people, for example, 'more confident in myself', 'I've grown', 'matured a lot'. The Nothing category included one response, 'not much, I'm still loud' and 2 nil responses. It is possibly not surprising that when asked about what had changed about themselves, the focus of the young people would be on the personal/social aspects of their development. However, it is an interesting marker, that what could be construed as more superficial

aspects such as skill development in a work environment, received less emphasis than possibly deeper more personal change.

The young people's plans for the future were balanced between specific/factual responses, for example, 'an office administrator', 'mechanic or work in a garage' and generally positive intentions, for example, 'go to college', 'get a job, earn some cash', 'get a job, an apprenticeship'. There was only one blank response to this question. Given that these were the responses from only 11 young people, there were a reassuring number of positive intentions stated.

The general response to PAVE expressed by the young people was that staff treated them in an appropriate manner, for example, in a more adult way. They felt engaged, supported, listened to and treated with respect.

Although both sets of interviews produced a large quantity of data, the structure of the prompting questionnaires also provided a framework for the analysis. As indicated earlier, there was a high degree of consistency between the two researchers when analysing the responses to the more open questions. As discussed in the next chapter, the young people's responses are also highly consistent. More detailed discussion of the above themes is undertaken in Chapter 5.

Chapter 5 Discussion of Results

5.1 Introduction

The first stage of this discussion section focuses critically on the results derived from the data gathered. The layout of the discussion follows the same pattern as that of the Results reported in Chapter 4, with each of the Research Questions taken in order.

5.1.1 Research Question A - Does PAVE successfully engage young people, previously disengaged from school, who have been referred to the programme?

What impact does PAVE have on the attendance of the young people selected for the programme? As noted earlier, one of the main criteria for referral to and selection for PAVE was the young person's poor attendance at their secondary school. Since an important aspect of the PAVE intervention was an attempt to re-engage young people in an adult led structured environment, whether they attended PAVE or not was considered one key factor in the evaluation.

The last full year's attendance figure at school was chosen for comparison with subsequent attendance at PAVE. This was considered to be a fair comparator figure owing to the fact that, as noted above, Chapter 1, pp. 15-16, young people can be subject to a process of disaffection during their secondary schooling. Therefore, their early attendance during 1st and 2nd year at secondary school may be at a reasonable level. However, it tends to be during 3rd and 4th years that the processes of disaffection become evident (Kirkman, 2005). An average attendance figure over the whole of their secondary schooling could mask the level of disengagement. This could in turn have reduced the measured impact which PAVE had on

their re-engagement as indicated by the rejection of the null hypothesis at the 1% level for the whole cohort, p.147, Table 5.

The effect size of 0.36 was positive, but as reported, was of a modest size (between small and medium in Cohen's interpretation). This led to consideration of further analysis of the data by gender in relation to first destinations after PAVE (Section 4.1.2, p.150).

An interesting point arose when the pre-PAVE attendance figures (gleaned from the individual school's electronic databases) were being compiled. With the exception of school (1) (see Appendix 3, p. 245), there were some young people from each of the schools with attendance reported in the high 90% region, and one young person with 100% attendance (10 students > 95% attendance). Given that a main criterion for referral is lack of engagement with their secondary school, as often indicated by attendance, there must be some doubt as to the accuracy of some of these recorded figures. When completing the standard referral form for PAVE, the school staff were only asked to indicate the young person's level of attendance rather than specifically report the school's database figure.

To check on the accuracy of attendance recording on the school's electronic database, the attendance figures for the young people attending PAVE were checked. When a young person attends the programme, PAVE staff send details of their attendance to their previous school because they are still registered with that school and their attendance continues to be formally recorded there. As indicated above, several PAVE attendees were marked by the schools as having >95% attendance during their time at PAVE, yet as can be seen from

PAVE's own figures, no young person achieved 100% attendance at PAVE. This may simply have been an administrative convenience for busy school staff. However, it does strongly suggest that the figures recorded at the school of the young people's attendance are likely to be larger than is factually correct.

Attendance rates are also one of the national performance indicators for schools in Scotland and attendance is reported annually to the Scottish Executive's statistical branch. A pressure on schools to achieve high attendance returns may be reflected in these figures. Section 1.1.10 of the 2005 report indicates the possibility of errors in this return (ScotXed, 2006).

PAVE's own recording of student's attendance is thorough. If a young person's attendance gives cause for concern, for example, not completing a full week results in the loss of their travel and lunch allowance, PAVE staff follow each incident of non-attendance up and discuss it with the young person. The attendance figures are thereafter carefully recorded and used as part of the reporting to the Scottish Executive to justify the European Social Fund grant paid to PAVE to offer the expanded programme. There were no indications of any irregularity in the recording of PAVE's own attendance figures. Given these clarifications of the attendance figures, the effect size of 0.36 could be considered to be a low estimate.

5.1.2 Research Question B - Are the young people who have experienced PAVE diverted from becoming part of the NEET statistics?

How do first destinations after PAVE compare with national figures?

The results pertaining to first destinations after PAVE relied on data from the careers officer who had been associated with the programme from its inception. Given that he had been involved in individual careers interviews with all of the young people while they were attending PAVE, he was in an ideal position to keep contact with them based on this prior relationship. Given also that he was the natural link from a school to post-school environment, he was well placed to carry out the follow-up of young people after they had left PAVE. It is now a required function of Careers Scotland staff, since the implementation of the Beattie report, to maintain a national database of all 14-19 year olds and to track outcomes for this group post-school (Scottish Executive, 2006e).

The careers officer's records had been kept reasonably well, but when asked for the post-school destinations for PAVE participants, he offered to 'tidy them up'. This involved, over a period of several weeks, phoning and checking with the young people for whom he had no data regarding what had happened to them after attendance at PAVE. As indicated earlier there had been a problem with PAVE during the 1998/1999 period when protracted ill health of the teacher had caused serious disruption to the programme. He was unable to provide much information for young people who had attended during this period leading to the relatively high 'No Record' figure of 27.2%. Given his level of positive involvement with the programme, and pivotal role in the post-PAVE transition, the reported relatively high 'No Record' figure could be considered reliable.

One of the main risk factors for young people ending up as NEET is disengagement with their secondary school as evidenced by low attainment and/or exclusion (York, 2005). What

the current study's data indicated was that the young people who had attended PAVE had approximately the same level of risk of joining the NEET group as the young people who had attended a Midlothian mainstream secondary school and did not participate in PAVE (see pp.149 - 150 and Tables 6 & 7). Given that the young people referred to PAVE were already considered to be disengaged from the 'society of school' this indicator could be considered a success for PAVE in re-engaging young people to the level of their peers in the post-school arena.

Further comparisons with Midlothian's general figures for entering employment and continuing with education and/or further training also merit discussion (see Tables 1 and 2 and discussion pp.26 - 28). The Scottish School Leavers Survey 2004 (Scottish Executive, 2004d) indicates that the number of young people in Midlothian going on to further education college or continuing with training is 41%. The figure for the young people who had attended PAVE was 41.4%. However, the number of PAVE leavers obtaining a job directly after PAVE was only 16.2% as compared to the general population of Midlothian young school leavers of which 41% went directly into employment. This initially may seem a rather negative indicator for PAVE. However, PAVE leavers only constitute 20.9% unemployed as compared to the 15.6% figure for the comparable age group of non-PAVE attendees (not a statistically significant difference, see pp 149 – 150).

When the above factors are considered together, the fact that PAVE manages to have at least the same proportion of its leavers enter FE or training (41.4%) as the general Midlothian population can be seen as a further positive indicator. Taken together, these figures could

suggest that PAVE leavers will be less susceptible to the ‘churning’ effect discussed in Chapter 1, Section 1.3, p.26. The PAVE leavers will at least fare no worse than the general school leavers in Midlothian and possibly even better. An analysis of the above figures indicates a significant re-engagement of PAVE attendees with positive post-school outcomes.

An examination of the link between attendance improvement, school to PAVE, and first destinations, Chapter 4, Section 4.1.2, p. 148, was undertaken. The ANOVA findings for both boys and girls who attended PAVE, suggests that, their school attendance record alone is not predictive of positive post-school destinations, Table 10, p. 153. However, the ANOVA on the figures for attendance at PAVE for the same group and first destinations indicated a statistically significant interaction between Destination and Gender ($p < 0.05$, partial eta squared = 0.107), Table 12, p.154.

This significant link between gender and first destinations, with PAVE attendance as the dependent variable, prompted further analysis to clarify the nature of this link. Each destination, Employment, Unemployment and Further Education/Training, was analysed against the attendance figures for PAVE (Tables 13 – 18, pp.155 – 157). The analysis shown on Tables 17 and 18 did indicate that there was a significant gender effect in favour of males who went on to Further Education/Training, accounting for 24% of the variance.

Analysis of variance for both girls and boys were conducted separately to clarify the nature and extent of the link between PAVE attendance and first destinations (Tables 19 – 22, pp.

157 – 160). Although there was a sizeable amount of variance (21%) linked to the girls' association with first destinations, the analysis failed to achieve statistical significance ($p = 0.059$). The relationship between boys and first destinations was statistically significant ($p = 0.023$) and accounted for 13% of the variance. This latter finding led to a further analysis of the nature of the association between boys PAVE attendance and first destinations (Tables 23 and 24, pp. 160 – 161).

The multiple comparisons indicated a statistically significant association ($p = 0.022$) between boys attendance at PAVE and continuation on to Further Education/Training. This significant positive finding is an indicator that PAVE is offering a programme to boys which helps link them in to further skill training and development. This finding relates back to the discussion about quality of first destinations and the 'churning' effect in section 1.3, p.26. The boys are hopefully moving towards sustainable futures by learning new skills beyond school leaving age rather than move directly into short term employment with the added risks of 'churning' from one short term situation to another and repeating the cycle.

The validity of the above findings (as discussed in Chapter 3, Methodology section, p. 112), in relation to Research Questions A and B can be judged against 4 criteria:

a) Internal validity

Given the significant change on the aspect of improvement in attendance, both genders together, the study and findings could be considered to have a high level of internal validity. Involvement in the PAVE programme encouraged a positive change in the level of

engagement with adult led structures. The analysis of the post-school destinations also appears to be a strong positive indicator of the impact of PAVE on boys of a positive post-school future due to their participation in the programme. Taken together, these findings indicate a good measure of internal validity for the study.

b) Descriptive validity

The approach to the evaluation is clearly delineated and a theory base for the approaches taken identified. The description of activities undertaken and the exemplars of materials used in the study would be sufficient for other researchers to replicate the approach. The study and report appear to meet the criterion of descriptive validity.

c) Statistical conclusion validity

The statistical measures applied appropriately to the data collected (both parametric and non-parametric) have been able to indicate the rejection or otherwise of the Null Hypothesis within acceptable ranges of significance for social data. Reported effect sizes have also demonstrated the fact that the differences identified have been non-trivial. The study appears to fulfil this criterion of acceptability.

d) Construct validity

The theory base for intervention and the 2-stage approach to analysing the data gathered indicate a strong measure of congruence. Utilising a positivist approach to identifying any likely changes attributable to involvement with PAVE in the young people's lives was a useful first stage in the investigation. The findings from the first stage provided a platform

for discussion of the possible mechanisms responsible for contributing to and maintaining this change. Construct validity also appears to be appropriate in the study.

In relation to External Validity, the ability to generalise the current study findings to other settings is addressed in Chapter 6 when all findings from the evaluation are discussed together with the relevant mechanisms which may be hypothesised to have operated.

This leads to the next section, the investigation of the young people's views.

5.1.3 Research Question C - If PAVE 'works', what particular features of the programme make it work ?

Are the young people's self perceptions changed by PAVE?

As indicated earlier, the scaling questions in the entry and exit interviews were included to establish any changes in the young people's self-perceptions by virtue of their attendance at PAVE. As a means of canvassing those views, the questions were designed to give the young person a chance to reflect by considering essentially the same question from differing perspectives.

The fact that all of the young people did give a variety of scaling point answers to these differing perspectives (self, teacher, friend, parent) indicated that they did reflect on the answers from the requested variety of perspectives, as opposed to giving the same rating for each of the aspects (Appendix 5, p. 251 and Graphs 1 and 2, and 3 and 4 in Chapter 4 p.168 -

169). The finding that all of these significant figures (including themselves) were considered likely to note a difference in 'how well you managed' is a marked indicator of a change in how these young people viewed their own coping abilities in a 'work' situation.

That this improvement in self-perception was unlikely to have occurred by chance, (H_0 rejected at the 1% level as checked with the Mann-Whitney U test), suggests that their change in perception of how well they managed in a formal adult structured setting may be substantial. Checking the effect size for the combined perspectives ($A_{XE} = + 0.80$) reinforced the scale of this perceived change in self-perception.

It would appear that one of the ways that PAVE contributed to the lives of these young people is that it changed their view of themselves in a positive direction and helped build confidence in those views of how well they cope in a 'work' setting. This could be attributed simply to the change in physical context and better staff/student ratio in moving from school to PAVE. However, that in itself does not detract from the perceived change in these young people's views of themselves. The fact that the question focussed on 'how well you managed', is specifically task-oriented and implies not only an attribution of ability, but one of application. This was an attempt to keep any perceived change in self-perception well grounded.

Only 2 young people (SR and LS) did not rate any increase in their overall self- perception on combined aspects (see Graphs 5 & 6 respectively, p.170 and Appendix 4, p.249). On examining their individual interview responses, SR found the classroom aspect of PAVE

very difficult and indicated that there had been a particular problem with Maths for which not enough help was given. SR was also part of the summer leaver's programme and was enrolled to take Standard Grade Maths in May 2005. None of the staff at PAVE were trained Maths teachers and it may have been out-with their competence to help SR as he was requesting. SR was also the only respondent who indicated that their classroom time at PAVE was 'worse' than they had expected (Exit questionnaire section 2(b) question 5). SR's response to the similar work placement question was 'as good as expected' (Exit questionnaire section 1(b) question 5), which seemed to confirm the specific nature of the classroom difficulty experienced (see also Graphs 1 & 2, p. 168).

LS's responses are interesting from a different perspective. Both equivalent question 5 responses to expectations of the classroom and workplace indicate 'better' and clearly, from the other question responses, this young person enjoyed and benefited from the experience at PAVE (see Graphs 3 & 4, p.169). The variation in response from 'before' to 'after' across the different aspects indicates that personally and in the views of teachers, 'how well you managed' had improved after attending PAVE. The biggest drop in rating was from 10 to 5 for the 'friends' perspective. This could indicate that either the views of this person's friends of their ability to 'manage' had decreased, or that the views of their friends was not considered as important as previously when they were at school. When scanned, the change in ratings for all eleven young people who completed 'before' and 'after' structured interviews on the 'friends' perspectives, showed a slight drop in overall rating from 'before' to 'after' (73.5 'before' to 72.5 for 'after').

When most of these young people were reporting a generally positive response regarding their time at PAVE, why should this figure indicate a neutral trend? For example, comparing the parallel figures for their own perceived change in how well they 'managed', showed a marked positive trend (62 'before' to 88 'after'). This point is returned to in the next section when the themes derived from the structured interviews highlighted a similar perspective regarding the young people's personal view of their development and their views in respect of peers.

The differential effect sizes measured for the differing perspectives - self, teacher, friend, parent (Chapter 4, Table 26, p. 166) raised some interesting points. Since the question asked the young person to consider how other people would judge them on their coping abilities, the differences noted could also appear to reflect the young people's views regarding the extent to which other people are likely to be judgemental of them. The extreme difference noted between friends and teachers tends to confirm this suggestion. A small effect size attributed to their peers ($A_{XE} = + 0.51$) assumes either a level of acceptance by their peers, or a perceived lack of interest in judging the young people on this dimension by their friends.

However, the expectation that their teachers are highly likely to judge changes in them (a positive effect size of $A_{Xn} = + 0.87$ is extremely large) possibly reflects the basis of their relationships with teachers based on extensive experience while attending school. From the earliest days of schooling, teachers assess and pass judgement on young people's work. This is not suggesting that judgement by teachers is considered pejorative in this context, simply, that the differences perceived by the young people regarding friends and teachers would

seem to reflect experience and validates the view that the young people did reflect carefully on this question.

Both the perceptions of themselves and their perceptions of their parents' views are that they (the young people) have made a substantial change in their abilities to manage a 'work' setting. These ratings ($A_{XE} = + 0.80$) and ($A_{XE} = + 0.78$) respectively are both large positive effect sizes. If the PAVE programme can help change their view of themselves and their perceptions of others views to this extent, then it has established another positive indicator of success.

5.1.4 Research Question C - If PAVE 'works', what particular features of the programme make it work ?

What are the common perceptions of the young people at entry to and exit from PAVE?

By considering the young people's responses to the Entry and Exit interviews separately, two sets of themes became evident. Because of the quantity of detail relating to these two sets of themes, this data is discussed under separate sub-sections 5.2 and 5.3 below.

5.2 Themes from Entry Interviews

As indicated previously, the themes which were identified from the structured interview responses on the open question relating to their time at school were consistent. From this question, the themes of:

1. Relationships with teachers
2. Rules
3. Relationships with peers

were predominant.

5.2.1 Relationships with teachers

For a number of the students, school was seen as a negative environment. This was reflected in the breakdown of relationships with teachers which appeared to play a significant role in their perceptions of school. Interview data from the young people in this study makes this very evident.

I didn't like it (school)...didn't like some of the teachers

...had bad experience with a French teacher

...(School was) crap...did'nae like...teachers

...didn't like it (school)...or teachers

Other comments from the young people such as:

Teachers labelled me as a trouble causer

(I was...) unfairly treated at school by the teachers as I got the blame for other people causing disturbances

I hated school...most teachers labelled me because of my sister

...didn't get on with teachers...teachers picked on me

Hated it (school)... the way teachers pick on you...stressed you out

suggests that they are affected by how they feel their teachers perceive them. How other people see them is important. Given what we know about the effects of negative self-perceptions, and the need to protect these once created, for example, in teacher/pupil challenging interactions, it is hardly surprising that so many of these young people are labelled as 'disaffected' (Pomerantz, 2005).

The responses to question 5 (Were there any teachers that you particularly liked? What subjects did they teach?) tended to support the view that the young people responded positively to certain teachers and the subjects they taught because of the teacher's ability to relate to students on a person to person basis (Tobell & Lawthom, 2005).

...technology, liked the teacher

...Art, good teacher helped you more

...Maths...supportive teacher

...(named) PE teacher (did not teach me but was friendly to me)

...administration teacher was nice

Those who admitted to liking school in some way connected that in part to their relationship with teachers which, despite being labelled 'disaffected' young people, they were all able to identify at least one teacher whom they liked. As indicated, it was the nature of their descriptions of why these were their favourite teachers which focused on the personal aspect as opposed to any stated interest in the subject matter being taught, a finding reflected in more general research (Bennett & Gamman, 2000).

Equally, for the majority of young people, negative perceptions and/or experiences of school were often linked to their perceived relationship with teaching staff. For the most part, their views of teachers were generally negative with the exceptions being the teachers whom they liked (or respected) for their personal qualities. These tended to be consistent with their views of their favourite subject taught by these teachers, (section 1 question 4).

...liked drawing a lot and got on with most of the art teachers...

...technology...I liked the teacher, he was laid back...one of your mates...had a laugh

5.2.2 Rules

This theme seemed to centre on the aspects of school which required young people to follow certain instructions from the teachers and their reported responses to these requirements.

...like prison...getting into too much trouble...

...wouldn't do what I was told...

...didn't like getting told what to do..

...strict, got into trouble for little things like make-up and jewellery

...didn't like rules...being told what to do..

5.2.3 Relationships with Peers

This theme was derived from the non-academic comments made by the young people.

...had a good laugh with my pals...

...a laugh with my pals but the work was boring...

...liked it (school)...social aspect, seeing lots of friends

...social side OK

In the PAVE entry interviews, young people expressed the clear view that their disaffection with school focussed on their interactions with teachers, the 'petty' rules of school as an institution, and much of the desk based class-work. Subjects with a practical element seemed to be their preferred choice. The young people were enthusiastic about their favourite subjects (mean 8.5, s.d. 1.5) and did not perceive themselves as necessarily much poorer than their classmates on those subjects (mean 7.2, s.d. 1.6). Their perceptions of their attendance were wide ranging (s.d. 3.4) and on average judged as poor (mean 5.2). These perceptions are reflected in the measured attendance of the larger PAVE cohort in terms of average and spread (see Appendix 3, p. 245).

Often, the only reported positive aspect of school for the young people was their interaction with peers. This was further reinforced by the final question (9) in the first section ('Tell me

about what you like to do when you are not at school'). More than half of the responses referred to unstructured and negative activities such as

...hanging about the streets with friends...

...be with my mates – hanging out...

...drink at weekends...

Hang about with friends at park – drinking...

...mucking about with my pals...

These all suggest a reliance on being with peers in the absence of any positive constructive or organised pursuits.

Section 2 of the entry interview, regarding the introduction to PAVE, was reported in detail elsewhere and referred to in Chapter 4, pp. 174 - 176. This was part of the formative aspect of the study, in that, findings from this section were fed back to PAVE staff and significant changes were made to the referral and entry procedures. This is discussed in more detail on pages 214 - 216 below.

5.3 Themes from Exit Interviews

The PAVE exit interview queried aspects of PAVE regarding the workshop, the classroom and any general points of note. Themes reflected a highly positive view of PAVE both workshop and classroom. The main themes which emerged were:

1. Relationships
2. Learning
3. Personal Change
4. The Future

The young people clearly understood what was expected of them and were happy with the support offered by staff, and found the personal nature of the support most significant. This applied to both workshop and class activities. Even when invited to express negative views of PAVE (for example, the least useful aspect of the programme?), the majority still gave positively oriented comments (for example, 'nothing') (section 1(a) question 4; section 1(b) qu.3; section 2(a) qu.5; section 2(b) qu.3; section 3 qu.3).

5.3.1 Relationships

Positive relationships with adults were reported as a common theme that arose again and again with the young people interviewed. Not surprisingly perhaps, it was the relationships with staff that were quoted repeatedly as a reason for preferring PAVE to school.

...got on well with staff...

...staff are good fun...

...better attitude by teachers...

...lots of support...

...teachers made it (classroom time) better...work didn't seem to be as hard

...got on better with the teachers and other staff...

...they are always helpful...

...teachers are better (than school)

It is apparent from the data, that staff at PAVE are committed to creating a positive ethos and maintaining an environment and structure that allows them to engage on a deeper level with the young people attending. It is perhaps notable that none of the staff have specialist training to work within an environment for troubled or 'disaffected' young people, and yet what is created is a very different context to that which school provided for the same young people. Feeling part of an adult environment and the perception that they were being treated as adults appealed to the young people at PAVE.

Staff always help...treated more like an adult by staff

Sometimes it's brilliant...teachers are willing to have a laugh...

...treated like an adult

It is possible that the less formal structure of PAVE allied with the greater ratio of adults to young people allowed the staff to focus more on building relationships with young people, and show that they care. Undoubtedly, this has not gone unnoticed by the young people.

Teachers are not moaning at you...

...more relaxed, get on better with teachers

Teachers are friendly

Teachers treat you with respect, better relationships...

Teacher was different to those in school...took time to explain work clearly...

...less formal, able to call them by their first names...

...better teacher-pupil relationships...

...relationships with teachers were open, honest, informal, caring

The young people clearly valued the relationships with staff, and particularly liked having the opportunity to talk and be listened to.

...got on well with teachers and had a laugh...

...relationships with teachers – they listen to us here

...teachers easier to talk to...

5.3.2 Learning

Interestingly, one of the strongest themes that emerged from the interviews with the young people attending PAVE was the opportunity to learn skills which they saw as meaningful and relevant to them. The young people were asked to describe the most useful aspects of PAVE as they saw it (section 1 question 3; section 2(a) qu.5; section 2(b) qu.2; section 3

qu.2). Almost all of those interviewed in some way volunteered 'learning' as a key aspect for them.

Learning catering skills, new experiences...

... learned new skills...

...learned new things (in classroom time)...like drug/alcohol awareness

Learning new skills...learning all about safety and health issues

Learning new things, doing things differently...

(I most liked) ...new things I learned at work and at PAVE

Helped improve my Maths and English

(the most enjoyable aspect)...learning

I learned things I didn't know

Learning about health and safety and how to use the tools...

...I didn't learn as much as I expected (welding)...

I enjoyed the work in the classroom, the work was easy...

I learned new interview skills, improved my timekeeping

For a cohort of young people who were apparently 'disaffected' with school processes, 'learning' was given a surprising importance. Many had also begun to extend their thinking beyond school years and were making connections with the world of work and the relevance of what they were undertaking at PAVE.

Learned new skills and techniques...

...learning practical skills...

...modules helped me prepare for getting a job...

...learning new things (for example, Heart Start) all the time

Learning how to strip engines...

...learning new skills like how to go about finding a job and what to do when I start

...knowledge and awareness of what the job requires

5.3.3 Personal Change

The young people interviewed also expressed that a significant element of the PAVE experience had been the change in themselves, indicating a renewed confidence, and less reliance on their peer group for validation. All but one respondent indicated a clear intention to progress beyond PAVE to either a job or education/training.

PAVE almost incidentally appears to offer these young people the opportunity to re-evaluate their own concepts of self and develop a new self-perception of someone who is confident, skilled and ready for the world of work or further education/training. When asked about the things that had changed about them personally, almost half of the young people interviewed mentioned an increase in confidence as a result of their time at PAVE

...more confident

...more confident in myself

A change in behaviour/attitude was another common theme. Many young people reported that they had matured in some way.

...my behaviour (has changed)...less aggressive...

...my language (has changed) ...less swearing

...my attitude to work (has changed)...

...motivation and dedication has increased particularly on placement

...I never want to skive...

... matured a lot...even my Mum says so!

... calmed down a lot...

...I've grown

Most of them also acknowledged that they had learned how to behave in a more mature manner which would be relevant to the world beyond school.

...know how to behave in a work place

...timekeeping and attendance...

...getting up in (the) morning, attendance is better than (at) school...

...I've learned interview skills...

...better and more knowledge...

5.3.4 The Future

There are also clues within the interview data that some of the young people shifted in their ideas about the impact they have in mapping out their own future.

Comments such as

...more control of my anger and aggression especially to staff...

...respect people better...

...more responsibility for my own actions

...more responsible...

...get on better with people

...more organised in my life...

...changed attitude towards education and work

...see my future ahead

reflect not just an awareness of pro-social behaviour, but also an acknowledgement that we all have the ability to orchestrate certain outcomes in our lives; we have responsibility for our own behaviour and therefore to some extent our future.

A strikingly positive aspect of the questionnaire response came from the final question (Can you tell me what you plan to do when you leave PAVE?). The young people involved had positive aspirations for their future, the majority of which were employment or further education/training focused. Examples of these aspirations include:

look for a job...or go to college to do gardening or chef training

...begin a joinery apprenticeship

...college to do a mechanics course

...continue training with MTS (Midlothian Training Services)

...an office administrator

What was also evident from the exit interviews was the relative lack of focus on peers.

Despite several questions asking about the most enjoyable/ most liked aspects of classroom/work placement/PAVE in general, the responses all focussed around either getting on well with adult staff and/or learning. The vast majority of the young people's comments were positive about themselves, future oriented and referred in different ways to their own growth and increased maturity. By its absence of comment, there appeared less reliance on peers for interactions, validation or feedback.

5.4 Further considerations

Disaffection amongst young people has for a considerable time perplexed those responsible for their education, non-attendance and disruptive behaviour being core to the presenting difficulties. Research undertaken to investigate pupils' own views on reasons for this disaffection included 'school lessons are not relevant to their lives' (36%), 'teachers are not making lessons attractive' (29%), and 'unappealing subject matter' (22%) (Ruddock et al., 1988). Given that disaffection is a complex phenomenon, resulting from a myriad of personal, social and environmental factors, the impact of school experience cannot be

ignored. Although the educational context of young people cannot be held wholly responsible for their social disengagement, it can undoubtedly be effective in improving young people's behaviour and attitude, and re-engage them in learning and life in general (Scottish Executive, 2006b).

What is clear from the initial interviews in this study, is that most of the young people did not have a positive school experience, were often lacking in an interest in school and were most likely to be described as disaffected by teachers, and many were consequently at risk of exclusion. If PAVE, as the follow-up data suggests, enables these young people to report a renewed interest in learning, build positive relationships and increase the possibility of employability within a clearly defined and structured environment, then it is a significant step in targeting those at high risk of becoming another NEET statistic and diverting them to more positive futures.

The Scottish Executive advocates the role of a keyworker in supporting young people at risk, and acknowledges that the strength of this relationship will be crucial to successful outcomes for these young people (Scottish Executive, 1999a). It is noteworthy that the young people interviewed at PAVE also placed high importance on the relationships they had with staff. While PAVE does not have a keyworker remit per se, the high pupil staff ratio allows for similar supportive relationships to be developed and strengthened.

As indicated, the responses of this group of young people were consistent with much of the research in regard to disaffected young people at high school (Cameron, 1998). What did

emerge as a consistent trend in the data was the importance of a personal, relational dimension for these young people. This was reflected in their views of peers, teachers and subjects at school and their social life beyond school. This could easily explain the apparently unusual finding that, despite being labelled 'disaffected', they maintained a clear focus beyond school of a positive productive future. At this stage in their lives, despite a not particularly positive experience of schooling, these young people did not need to be destined to become part of the 'NEET statistics'. There was a continuing positive ethos retained by these young people which professionals needed to identify, nurture and reflect in their work with them.

5.5 Summary

The results contained in this study indicated that PAVE has:

- a. had a positive impact on the attendance and participation of young people in an educational/vocational programme, particularly boys
- b. promoted and inspired many to report a renewed interest in learning, that is, the young people could be 'switched on' to learning again
- c. increased their confidence and skills, that is, they know what they know and that they may need to learn more
- d. helped develop positive relationships with adults, that is, adults are a useful source of support and it is possible to have a positive relationship with them
- e. supported personal change, that is, the young people have developed a positive personal perception of themselves in an adult environment and they feel positive about this.

In achieving the above, it can be considered that the initial research questions have been answered in so far as:

Research Question A: Does PAVE successfully engage young people, previously disengaged from school, who have been referred to the programme? This was addressed by (a), (b) and (d) above.

Research Question B: Are the young people who have experienced PAVE diverted from becoming part of the NEET statistics? Although not answered directly by the findings in this report, indications of a positive diversion for boys back towards further education and/or training is indicated in the discussion in Section 5.1.2, p. 188, above. This re-engagement could be further enhanced by (b) and (c) above.

Research Question C: If PAVE 'works', what particular features of the programme make it work? This has been addressed by (c), (d) and (e) above.

Moreover, and probably most importantly, the young people enjoyed their experience of PAVE and wanted to be part of it.

The conclusions drawn from this analysis and the weighting that can be applied to them is discussed further in Section 5.6 in relation to the theory base underpinning the study.

The issue regarding the relatively high early drop out from PAVE (raised as a subsidiary question in Chapter 3, Section 3.3.3, p.138) was addressed in the following way. Feedback to and discussion with the project staff led to several significant changes to the entry procedures:

1. PAVE leaflets and the programme's CD-ROM were re-distributed to the secondary schools highlighting the need for the young person being referred to be informed of the nature of the PAVE programme.
2. The application form had a section added for the young person being referred to complete and sign. If the form was not signed, it was returned to the referrer for completion before the referral could be considered by the admissions group.
3. A more robust visit programme for young people was developed where it was required that the young person visit the PAVE programme and staff prior to completing the application form.
4. The induction process was strengthened, featuring, for example, workshop visits as part of the core experience of the young people's induction week.

These practices were put in place in January 2006 and constituted the formative aspect of the study.

A footnote to these recommendations is the continuing monitoring of PAVE regarding the early dropout rate. For the Summer leavers 2006, Winter leavers 2006 and Summer leavers 2007, the dropout rate during the first 4 weeks of the programme fell to zero. There were student dropouts of 1, 4 and 1 respectively, which occurred at least 4 weeks after the programme started, it is therefore unlikely that these were due to faults in the new transition procedures for young people starting at PAVE.

In addition to the discussion of the 5 aspects of validity above, pp.189 - 190, this reduction in early dropout rate indicates a significant improvement in the identification and induction of appropriate candidates for PAVE. The success of this additional intervention also highlights the predictive validity of the findings from the structured interviews. The questionnaires used for the structured interviews were able to elicit information which was used as the basis for positive decisions regarding changes to PAVE, thereby demonstrating a high degree of predictive validity in the approach to the study.

The programme continues to be monitored at both entry and exit by use of the structured interviews designed for this evaluation, thereby giving continuing feedback to staff in monitoring the progress of the project.

A summary version of this study was circulated to senior managers within Midlothian Council in 2006. As of November 2007, PAVE has been 'mainstreamed' within the Education Division of Midlothian Council, and no longer requires to apply for funding from elsewhere, for example, the European Social Fund, to operate all 3 groups – Summer leavers, Winter leavers, and the whole year group. This decision further adds to the predictive validity of the study.

5.6 Evaluation Findings and the Theoretical Background

The models proposed for addressing the evaluation of PAVE are essentially twofold:

- Change and Transition as conceptualised by Complexity Theory
- Realistic Evaluation as outlined by Pawson and Tilley (Pawson & Tilley, 2000)

Complexity theory, as discussed earlier, outlines the concept that small variations in the functioning of a system can lead, later, to significant changes in the functioning of the whole system. These significant changes, although determined by the earlier small variations cannot reliably be predicted from them. Factors such as feedback loops within the system lead to change which is not solely defined by the system's initial parameters. From that perspective, change is not seen to be a linear process.

There is a clear link between this set of concepts and those applied to Realistic Evaluation approaches. These latter approaches embrace small variations in a social system's functioning and recognise their importance in determining outcomes for that system. As outlined in Axiom 1:

'Research has to answer the questions: what are the mechanisms for change triggered by a program and how do they counteract the existing social processes?'

(Pawson & Tilley, 2000, p.75)

Realistic evaluation emphasises the importance of discovering what these mechanisms are rather than focussing only on the significance of some measured attributes of a programme's hypothesised success.

Axiom 2 stipulates:

'Research has to answer the questions: what are the social and cultural conditions necessary for change mechanisms to operate and how are they distributed within and between program contexts?'

((Pawson & Tilley, 2000) – p.77)

This axiom not only emphasises the initial context within which the change is hoped to occur, but the movement from that context to a fresh context within which the system is hoped to function in its newly developed state. Clarifying the interaction between these contexts and the identified mechanisms operating on them is seen as the main purpose of the research. It is this clarification which allows programme designers to stipulate more focussed and potentially successful interventions in the future. The process of research is therefore iterative in a functional manner. Translated into a psychological frame, this would suggest that if we are studying hoped for changes by virtue of an intervention in someone's life, for example, enrolling them in a programme such as PAVE, it is necessary to define as closely as possible the prior and new contexts for that person and identify the mechanisms which we hope will promote change for them in the desired direction, for example, re-engagement with adult organised pursuits. Rather than just describe secondary schools as we know them, the

context must be described in the terms of that young person's experience of it. Only by adopting the young person's perspective will it be possible to identify, or postulate, what the mechanisms are which may promote change for them and help to create a new context as experienced by the young person. By examining this new context as experienced by them, we will not only be clearer about the nature of the change which has taken place, but will be better able to define the mechanisms which promoted and may maintain that change.

Some of the mechanisms in this study are clarified by examining the themes which arose from the structured interviews. Clearly 'relationships' with adults is a crucial mechanism. Not only was this highlighted in a negative sense when reference was made to school and teachers there, but the positive pole of this theme was also highlighted in relation to staff at PAVE. Rather than simply seeing this theme as school = negative and PAVE = positive, the fact that so much importance was ascribed to it in both contexts underlines the importance of this mechanism of 'adult relationships' for young people in their

- ability to sustain either context
- ability to see themselves as successful (or otherwise)
- views of themselves in terms of 'managing'.

How these mechanisms work is again highlighted by the structured interview responses. A major feature of these mechanisms is the feedback of information to the young people, both by these significant others and by themselves. As indicated by Complexity Theory, this feedback of information into the system (the young person and their context) gives rise to outcomes which are determined by this feedback, but not necessarily predictable from it. The

many references to positive relationships in the structured interview responses is suggestive of regular positive feedback from the PAVE staff to the young people.

Not all of these young people were excluded from school at the point of referral, but some were. However, all of them had a negative view of school and most of their teachers. Not all of the young people had negative views of all of their teachers. All of the young people could name a teacher that they liked. Therefore despite holding strongly negative views of school, it was not necessarily predictable that they would all have a teacher that they liked.

Similarly, despite a change in context from school to PAVE, it was not necessarily predictable that most of the young people who experienced PAVE should so overwhelmingly view it as a positive experience. In particular, it would not necessarily be predictable that the classroom aspect of PAVE should be viewed by the young people in such a positive manner. Only one young person saw the PAVE classroom experience as disappointing, and this seemed confined to a particular issue with maths and a lack of support.

What sustained the new context of PAVE seemed to be the same mechanism as that which led to disaffection with school, that is, the feedback which the young people received from the adults there. The nature of the feedback can be assumed to be positive not only on a factual basis, for example, in relation to their success on work, but on the personal/social/emotional dimension. This theme was evident in the responses to the exit interview in both class and work placement contexts (sections 1(a) qu.3; 1(b) qu.2 and

sections 2(a) qus.1,5; section 2(b) qu.2 respectively). The ‘most useful aspect’ of both class and work elicited a large number of positive responses on the personal/social/emotional dimension. It would seem that an important sustaining mechanism in PAVE is the personal/relational feedback given by staff.

Although in some respects this is not surprising, it must be remembered that all of these young people were referred into this programme for a reason, that is, disaffection with an adult organised structure - school. The feedback from PAVE staff not only has to be given to the young people, it must be received by the young people to be effective. Thereafter, it must continue to sustain the positive responses of the young people and this it achieved. There were a large number of positive responses to the question ‘what 3 things have changed about you?’. The majority of these were on the personal/social/emotional dimension. Once again this underlines the importance of the mechanism of personal/social support leading to a change of context within the young person themselves – they can carry this type of personal change of context forward with them after they leave PAVE. Almost all had positive aspirations for themselves after leaving PAVE. Given that PAVE is only a 5/6 month programme, this level of stated change of intention from their prior disaffected situation would not be an obvious prediction.

It is strongly suggested by the differential responses to section 1 qu.3 and section 3 qu.1 (see graphs 1, 2, 3, 4, pp. 168 - 169) on the ‘self’ aspect of self-perception of ‘how well you managed’, that the feedback to the young people from the staff does become self-sustaining as could be indicated by Complexity Theory.

The young people appear to be operating within a different frame in terms of their interaction with PAVE staff as compared to the frame of their 'dialogues' with school staff. The young people could be construed to be operating far from equilibrium while (just) still in school, caught in a limit (or periodic) cycle attractor, revisiting the same negative interactions/frames with staff. In this state they could be ready to bifurcate toward a new chaotic attractor when supplied with new energy/experiences, that is, PAVE staff interactions. The physical move to a completely new context such as PAVE could also induce sufficient energy into the system (the young person and their immediate context) to help trigger a bifurcation toward a new attractor (see earlier Torre, 1995) . The fact that the new attractor is chaotic is simply an aspect of the dramatic change in the new system's functioning which indicates that, although the new behaviours are bounded by the attractor, they are still open to new energy (experience) and yet maintain their complexity and stability (see earlier, Gilgen, 1995, p. 65). The stability could be maintained by the continuing positive feedback from the young person themselves into their own self-perception.

5.7 Limitations of the study

1. Post hoc investigation. It would have been ideal, from a positivist viewpoint, to set up an experimental design with pupils from a single year cohort who were accepted into and attended PAVE, compared with those who had been referred to PAVE but were unsuccessful at the referral stage. The groups could have been compared on a number of factors, in particular, the long term outcomes after both groups had left formal education/training. However this programme would not have provided sufficient numbers for both groups for comparison purposes. The capacity of the

programme and the fact that referrals came from potentially 7 different schools, some degree of matching would have been necessary. This would have been impractical due to insufficient numbers for this exercise. To achieve sufficient numbers for comparison purposes of any sort, required the study to be post hoc.

2. The use of attendance as the sole determiner of initial effectiveness of PAVE only allowed for indicative conclusions to be drawn from the analysis, rather than conclusive predictive findings. However this indicative measure and the subsequent analysis and tentative conclusions drawn were sufficient to merit a detailed look at the mechanisms which appeared to influence PAVE's effectiveness from the young people's perspective. This was consistent with the mixed model design employed which incorporated both quantitative and qualitative data from the initial design through to reporting.
3. The relatively low numbers of girls in the final analysis of PAVE attendance versus first destinations meant that a possible trend, opposite to that of the boys, could not be investigated further due to the comparison not reaching traditionally accepted values for reliability.
4. The lack of a pilot of the structured interview questionnaire could be seen to have limited the reliability of the evidence drawn from the young people's responses. However, the range, detail, consistency and honesty of responses from the young people indicated that their views appeared to be representative of the influence

PAVE had on the young people. The fact that it was an interview and the questionnaire was used as a tool to restrict responses to particular areas of interest provided necessary structure for the relatively straightforward derivation of themes from the young people's responses. It is of note that there seemed no need to revise the questionnaire after the Summer Leavers' interviews before applying the same approach to the Winter leavers group.

5. The use of a questionnaire to elicit the young people's views did limit the scope of their responses as compared to a more open ended, recorded and transcribed interview. However the resources for collecting, analysing and cataloguing this level of response were not available to the author. The study was developed from a very practical need to evaluate a programme quickly due to the requirement to bid for funding in the very near future.

6. A more thorough analysis of the young people's responses using computer based word analysis software (such as NUD*IST) could have increased the validity of the findings. There was an inherent distortion built in to the responses by having the interviewers write the responses, and no doubt apply their own summary view to the responses. The wide range and directness of the recorded responses were indicative that this potential distortion was unlikely to be a significant factor. As indicated earlier, however, the use of the questionnaire as a prompt did aid the derivation of themes from the young people's responses.

7. The fact that three different interviewers were utilised at different points in the study would, undoubtedly, reduce the reliability of the conclusions drawn from the interview data. However, this was balanced by the fact that that the author, although associated with the setting up of PAVE, took no part in interviewing the young people. This reduced the likelihood of an inadvertent bias being introduced in the style of questioning of the young people and a consequent reduction in the validity of their responses.

8. Given the author's involvement with PAVE, particularly at inception, and being represented on the Admissions Group, could be seen as introducing bias into the study. It is hoped that the transparency of the reported findings and analysis of the data gathered will leave the study open to close scrutiny from that aspect. Devising the interview questionnaires could build in bias to the derivation of themes. However, the questionnaires were adapted and revised in collaboration with the two colleagues mentioned in the acknowledgements. They were also the interviewers for the initial Summer Leavers group.

9. The decision to fund PAVE completely from Education Division resources after the short version of this study reported was taken at Committee level within the Council without any direct influence from the author.

Chapter 6 Conclusions

The new context (PAVE) can be construed in terms of Pawson and Tilley's model of social intervention as context (C_2) being maintained by the new mechanisms outlined above (M_2). These concepts are useful in focussing the research on clarifying these mechanisms such as, for example, the themes which became evident from the structured interviews. However, there is also an added utility in borrowing the concepts from Complexity Theory to establish not only that change is occurring in the shift from one context to another, but that the nature of the change could be significantly different in its qualitative nature from the first context - a limit cycle attractor - to a new context as described by a chaotic attractor. This new attractor could be characterised by as:

- an open system (the young people are accepting of new situations and challenges) which is
- complex (the young people feel ready for life beyond PAVE)
- stable (there is a renewed self-sustaining positive feedback mechanism for the young person's self-perception).

Also, as indicated earlier, the focus on the mechanisms and contexts in Realistic Evaluation helps to clarify how change may occur. As postulated earlier, change is an essential part of living and a study of change and change mechanisms are natural fields of enquiry for human beings. The study of change mechanisms helps not only try to generalise beyond the current study by, for example, simply trying to replicate PAVE elsewhere, but incorporating what

has been clarified from the study of the mechanisms into new contexts and adjusting them accordingly (Wilson & McCormack, 2006).

The concept that the quality of the change, as indicated by the possible shift to another attractor, is mirrored in the significance of the change for the young people themselves. They appeared to feel differently about themselves. The sustaining of that change is an important aspect of Complexity Theory in that the mechanisms indicated in the Pawson and Tilley model appear linear, however, a self-sustaining form of the change could be accounted for by the recursive nature of the feedback that the young people receive. Positive feedback from the adults in an appropriate manner could lead to a cycle of positive feedback within the individual young person to themselves- their self-percept may grow.

A further aspect of Complexity Theory is the unpredictability of outcomes from the small initial changes in a system. It came as a notable, and unlooked for, finding in this study that almost all of the young people appeared to re-value 'learning' after their time at PAVE. It seemed that they had a different frame for 'learning'. From their earlier responses at the entry interview regarding school, it would have been highly unlikely that this prediction could have been made.

It would appear from this study that the combined use of the metaphors associated with:

- Complexity Theory
- Frames from Microgenetics
- Change Mechanisms and Contexts from Realistic Evaluation

helped clarify some of the findings and gave indications of how these metaphors can be applied more widely. An example of the latter is attached as Appendix 8, pp. 257 - 262. The author had listened to a colleague describe an intervention using Solution Focussed approaches in a school setting and tried fitting the metaphors above to the described intervention to ascertain if the metaphors added any value to the description and explanation given. The main focus became:

- Appreciating the non-linearity of a complex social dynamic
- Looking for a shift to a different level of functioning
- Identifying the causal mechanisms
- Clarifying the self sustaining aspects of the new dynamic

Not unlike the current study, the use of these metaphors helped inform the thinking regarding the example in a manner which could transfer to other complex social situations with which educational psychologists are invited to help on a regular basis. The use of metaphor to enhance and extend conceptual thinking is well documented (Hymer, 2003; Open University, 2004; Wilson, 1995).

It may be argued that the use of these metaphors has only given an alternative means of describing some obvious findings. However, the author avers that there is added value in the explanatory nature of these concepts. Hamre and Pianta (2005) in a large scale evaluation of the progress of children in the early stages of elementary school in the USA arrived at the conclusion that if you are nice to young children and give them some structure for their learning, then they can make up early pre-school deficits in their learning very effectively. This may seem as though it is simply stating the obvious. However, the children who made

these gains constituted a high 'at-risk' group as identified on a number of factors predictive of educational failure. Not only did the children in this group make positive gains, they achieved as well as their low-risk peers and had as good relationships with their teachers as had the low risk children in Grade 1. They had significantly lower rates of conflict with their Grade 1 teacher than they had displayed in their kindergarten class the previous year. The children appeared to have a more positive view of themselves as learners.

The teachers who helped the children achieve these gains had identifiable positive attributes on both instructional and emotional support, which they displayed in their classroom interactions with the children. These attributes could be modelled with other teachers to help them develop more positive support mechanisms in their classrooms. Similarly, in the present study, the analysis of what seems to make PAVE work, that is, the identifiable mechanisms, are positive relationships and structure. These also appear to be effective for this older age group. Utilising a model which aids identification of the particular processes which are effective is helpful in considering the transferability of these processes. By increasing the likelihood of programme transferability, the predictive validity of the study findings is enhanced.

How does the current study add to our knowledge of Complexity Theory and its relationship to 'life', 'living systems' and psychology referred to in Chapter 2? It has already been illustrated that small changes in a young person's life, such as involvement with PAVE can have significant and unpredictable outcomes for them consistent with the theory, for example, 'learning'. What has been suggested additionally is that the process of working

through a transition for a young person does of itself make significant changes to them.

What the young people presented through their responses was their increased confidence in their interactions with adults and their intended futures in the outside world. This increase in confidence with respect to interactions is reminiscent of an adaptation to the boundary between them and their environment, that is, how they perceive their world has changed to a more positive frame. This type of change was described in Chapter 2 regarding autopoietic systems. The boundary (in addition to the internal structure and processes) between a living entity and its environment adapts according to the information it receives from its environment, although not wholly determined by it (Chapter 2, section 2.1.6, pp.73 - 74).

What the participants in PAVE have demonstrated matches that description. How they perceive, that is, their perceptual system has adapted on the basis of a new information flow, the feedback received by them from PAVE staff.

As indicated above, the use of the metaphors from autopoietic systems and Complexity Theory can inform our perspectives on how these young people have developed during their time at PAVE. By also studying the transitions encountered by these young people, we can further inform the same theories. As discussed in Chapter 2, p.86, working through a transition is reminiscent of Erikson's theories regarding development through facing challenges at particular stages in the growth of child to adult. By noting how the young people in the current study appear to have made radical shifts in their perceptions of their world, particularly the world of adult functioning, in a relatively short time, we can see that 'transition' is a useful concept in its own right, rather than thinking of 'stages of development' as relatively fixed challenges. As discussed earlier, we, as living entities, are continually encountering transitions. Facing the challenges presented by these transitions and

developing as a result is not unlike the earlier descriptions of 'life' discussed above. In particular, the young people demonstrate that, as a result of participating in PAVE, their boundaries have adapted to allow them to function more as 'open systems' living at the 'edge of chaos'.

The young people in this study appeared stuck in periodic attractors in their school environment, retreating from the challenges presented because of lack of perceived support in their immediate environment. With the shift of context they appeared to have gained energy which helped increase the likelihood of their shift to a new attractor, ideally a chaotic attractor. This new state describes a form of dynamic equilibrium which is the ideal state to be in for growth to occur. The young people seemed ready to take their newly found perceptions of adults, learning, and their own new self-perceptions into the outside world where they could continue learning and utilise their confidence in their adaptability. In the psychological domain this has strong parallels with the study of resilience, particularly the 'reaching out' factor (Jackson and Watkin, 2004).

The use of the above models to extend psychological thinking in practice and the focus on transition as it applies to young people and how they develop resilience is recommended.

The original research questions queried to what extent PAVE was successful and, if so, what contributed to that success. Using a mixed model approach to address these questions further informed by Realistic Evaluation approaches has helped answer them. PAVE appears to be successful in the re-engagement of young people who have become disaffected by school. It

will hopefully also help them engage in a positive way with the adult organised activities, such as work, beyond school. The most significant contributor to that success is the newly developed relations with adults in the PAVE setting which appears to help the young people reformulate their concepts of self and learning in a much more positive light.

Clearly most of the young people in this study saw PAVE as a relevant and worthwhile transition between school and work or further education/training. For many it enabled reflection and re-evaluation of life choices and addressed a variety of their maturing needs. The Scottish Executive may be missing an important point with regard to their drive to incorporate work-related experiences as an established part of the school curriculum (Scottish Executive, 2002, 2004b). As indicated in the York group's findings (quoted in Chapter 1, pp.20 – 22, bullet point 3), NEET based policies in Scotland have had no demonstrable impact on positive, long term labour market outcomes (York, 2005). The evaluation of PAVE points to the possibility that it is the quality of relationships with the adults who are supporting them which could lead to the self-sustaining positive changes in young people's own self-perceptions which, in turn, could also lead to longer term changes in post school experience, not just vocational experiences.

The positive personal/social/emotional dimension was commented upon by the young people both in the classroom and in the workplace. Young people do need the opportunity to demonstrate that they have something to offer in the wider world of work, but, as this study indicates, they must be supported by positive relationships with supportive adults to enable them to take the risks associated with learning from failure.

Given that appropriate social skills and behaviours are dependent on these needs being met, PAVE has a legitimate future in shaping the lives of this cohort of young people. As indicated above, one of the most striking and unexpected findings of the present study was the young people's reported positive attitudes regarding learning as a result of attending the PAVE programme. This parallels another finding in a school-based programme which tried to prepare young males for the work place (Lloyd, 2002). Many of the young men in that study reported that the programme in which they were involved, helped them to refocus on their school work and gather a sense of what school could offer them before leaving for the world of work.

In the above respect, PAVE has addressed the Scottish Executive's recommendation (as quoted in Chapter 1, pp.20 - 22, bullet point 3), by focussing on education and training and trusting that young people will make positive decisions based on this form of support (Scottish Executive, 2006c, 2006e). By re-engaging young people with work and education, PAVE is also addressing the Scottish Executive's broader commitment to social inclusion.

Appendix 1

PAVE Entry Interview Schedule

Section 1

1. What High School did you go to?

Prompt 'Any others?'

2. Tell me a little about your experience at High School.

Prompt 'Anything else?'

3. Thinking about High School, how well do you think you managed? Where would you put yourself on a scale of 1 to 10?

Prompt – rating scale (10 being very well)

1 2 3 4 5 6 7 8 9 10

- Where would your teachers have put you on this scale?

1 2 3 4 5 6 7 8 9 10

- Where would your school friend(s) have put you on this scale?

1 2 3 4 5 6 7 8 9 10

- Where would your Mum and/or Dad have put you on this scale?

1 2 3 4 5 6 7 8 9 10

Appendix 1 (contd)

4. What were your favourite subjects at school?

Prompt – ‘Anything else?’

5. Were there any teachers that you particularly liked? What subjects did they teach?

6. (a) You mentioned X was one of your favourite subjects, on a scale of 1 to 10 how much would you say you liked/enjoyed X?

Prompt – rating scale (10 being a lot)

1 2 3 4 5 6 7 8 9 10

- (b) How easy/difficult did you find X in comparison to the other young people in your class? Prompt – rating scale (10 being very easy)

1 2 3 4 5 6 7 8 9 10

7. On a scale of 1 to 10, how would you rate your attendance at High School?

Prompt – rating scale (10 being excellent)

1 2 3 4 5 6 7 8 9 10

Appendix 1 (contd)

8. Tell me a little about your family.

Prompt - 'Who is at home?' Do you have brothers and sisters? What ages are they? What do they do? What about Mum and/or Dad – do they work?

9. Tell me about what you like to do when you are not at school?

Prompt – 'Clubs you are in?' 'Groups?' 'Sports?' 'Anything else?'

Section 2

1. How did you first hear about PAVE?

Prompt 'school?', 'parents?', 'other young people?', 'social worker?'

2. What did you know about PAVE before you started?

Prompt 'Did you get any information through leaflets? Visits? Talk to someone?'

Appendix 1 (contd)

3. Tell me a little about your first visit.

- *Who did you meet?*

- *What did you see?*

- *Where did you go?*

- *Who did you visit with?*

- *Anything else you remember?*

4. Tell me a little about your interview.

Prompt 'Can you give me two words to describe it?'

5. How did you find out you had a place at PAVE?

Appendix 1 (contd)

6. What were your first impressions of PAVE?

Prompt 'What three things did you really like?'

7. To help other young people have a good first experience of PAVE what 3 things would you change?

Prompt 'Info leaflets – were they easy to understand?' 'Did you get enough information?' 'Was the visit helpful? Do you think another visit was needed? What else would have been helpful?'

8. Tell me about your first week at PAVE.

Prompt 'What did you do?'

9. What would you most like to do when you finish your placement at PAVE?

Prompt 'Get a job?', 'Go to College?', 'Begin a training course?'

Appendix 2

PAVE Exit Interview Schedule

Section 1(a)

1. Can you tell me a bit about your work placement?
(*Prompt: did you try any other work placements?*)

2. How useful did you find your work placement on a scale of 1 - 10?
(*Note: Focus on predominant placement if more than one experienced*)

Scale: 1 = *Not at all useful* > 10 = *Just what I needed*

1 2 3 4 5 6 7 8 9 10

3. What were the most useful aspects?

4. What were the least useful aspects?

5. What would have made it more useful?

Appendix 2 (contd)

Section 1(b)

1. How enjoyable did you find your work placement on a scale of 1 - 10?
(Note: Focus on predominant placement if more than one experienced)

Scale: 1 = Not at all enjoyable 10 = really enjoyable / excellent

1 2 3 4 5 6 7 8 9 10

2. What were the most enjoyable aspects?

3. What were the least enjoyable aspects?

4. What would have made it more enjoyable?

5. Was your placement (a) Better, (b) Worse, or (c) As good as you expected?

6. What was it that made it 'Better' / 'Worse' / 'As good as' you expected?

Appendix 2 (contd)

Section 2(a)

1. Can you tell me a bit about your classroom time?
(Prompt: the 'school' types of work)

2. Did you sit any Standard Grades? If so, which ones?

3. Did you complete any other assessments / projects / certificates?
(Prompt: ASDANs, SQAs, Modules)

4. How useful did you find your Classroom time on a scale of 1 - 10?

Scale: 1 = Not at all useful > 10 = Just what I needed

1 2 3 4 5 6 7 8 9 10

5. What were the most useful aspects?

Appendix 2 (contd)

6. What were the least useful aspects?

7. What would have made it more useful?

Section 2(b)

1. How enjoyable did you find your Classroom time on a scale of 1 - 10?

Scale: 1 = *Not at all enjoyable* > 10 = *Really enjoyable / excellent*

1 2 3 4 5 6 7 8 9 10

2. What were the most enjoyable aspects?

3. What were the least enjoyable aspects?

Appendix 2 (contd)

4. What would have made it more enjoyable?

5. Was your Classroom time (a) Better, (b) Worse, or (c) As good as you expected?

6. What was it that made it 'Better' / 'Worse' / 'As good as' you expected?

Section 3

1. Thinking about your time at PAVE, how well do you think you have managed?

Scale: 1 = *not at all well* > 10 = *really well*

1 2 3 4 5 6 7 8 9 10

- Where would your teachers / instructors at PAVE put you on this scale?

1 2 3 4 5 6 7 8 9 10

- Where would the other young people at PAVE put you on this scale?

1 2 3 4 5 6 7 8 9 10

- Where would your Mum and / or Dad put you on this scale?

1 2 3 4 5 6 7 8 9 10

2. What 3 things have you liked *most* about PAVE?

Appendix 2 (contd)

3. What 3 things have you liked *least* about PAVE?

4. What 3 things would you like to change about PAVE?

5. What 3 things about *you* have changed since starting at PAVE?

6. Can you tell me what you plan to do when you leave PAVE?

Appendix 3

PAVE Students' Attendance: 't' test and effect size calculations

Student (school)	Attendance School	Attendance PAVE
AW (1)	47	62
CE (1)	55	65
AmW(1)	42	97
TW(2)	66	82
PD(2)	97	77
RJ(3)	70	95
JW(3)	96	68
JM(3)	87	53
TS(3)	77	67
JB(3)	90	75
SL(3)	38	77
LO(3)	57	83
JA(3)	96	90
BT(3)	67	99
CB(3)	96	92
MS(3)	25	96
PS(3)	100	87
LM(3)	73	87
SG(3)	92	94
PW(3)	28	47
BC(3)	99	69
RK(3)	80	93
LS(3)	50	68
JWt(3)	55	65
KD(4)	57	91
MR(4)	72	62
IK(4)	46	96
FM(4)	50	82

Appendix 3 (contd)

CM(4)	79	94
GT(4)	92	74
CI(4)	50	87
DR(4)	60	80
DM(4)	77	97
TW(4)	54	58
KK(4)	68	86
TS(4)	65	54
KB(4)	69	65
PM(4)	91	51
KrB(4)	32	34
JoF(4)	20	56
CI(4)	81	90
RW(5)	49	49
PC(5)	79	64
SS(5)	55	37
JF(5)	46	95
AB(5)	88	28
KB(5)	56	89
SR(5)	25	73
JB(5)	36	52
KW(5)	68	73
EM(5)	12	64
GG(5)	22	67
AA(5)	59	56
SB(5)	66	84
TC(5)	45	88
JF(5)	92	93
GM(5)	43	88
JR(5)	58	95
CC(5)	57	84
AK(5)	44	37
SK(5)	35	18
VB(5)	98	61
SB(5)	78	20
RM(5)	82	75
SL(5)	49	48
MM(5)	51	58
MR(5)	70	39
CW(5)	49	91
PW(5)	73	83
AC(5)	61	77
KH(5)	19	34

Appendix 3 (contd)

DK(5)	99	65
SM(5)	30	54
CH(6)	48	82
EM(6)	52	22
PM(6)	43	20
BC(6)	79	79
CM(6)	61	46
MQ(6)	63	88
DT(6)	73	90
LD(6)	53	92
SA(6)	66	90
JD(6)	89	99
LH(6)	72	73
FM(6)	92	97
SR(6)	96	93
SM(6)	72	78
NM(6)	80	38
LR(6)	66	53
KM(6)	13	37
MS(6)	97	59
Sum	5907	6514
Mean	63.52	71.58
Standard Deviation	22.46	21.32

t-test, paired scores (p value) 0.0044

Effect Size

$$\text{Cohen's } d = M_2 - M_1 / \delta_{\text{pooled}}$$

$$(\delta_{\text{pooled}} = \sqrt{(\delta^2_A + \delta^2_B)/2})$$

$$\begin{aligned} d &= 71.58 - 63.52 / 21.89 \\ &= 0.36 \end{aligned}$$

Appendix 4

Table of Questionnaire responses to Section 1 Question 3; Section 3
Question 1 – ‘How well I managed’

Summer Leavers 2005

Sect.1 Qu.3 Entry questionnaire	SELF	TEACHER	FRIEND	PARENT	TOTAL	Sect.3 Qu.1 Exit questionnaire	SELF	TEACHER	FRIEND	PARENT	TOTAL
SA	3.5	4	5	4	-		-	-	-	-	-
LH	4	2	3	4	-		-	-	-	-	-
AW	4.5	5.5	1.5	3.5	-		-	-	-	-	-
KW	4	1	6.5	3	-		-	-	-	-	-
SR	8	5	3	8	24		6	7	4	7	24
LMD	7	5	4	6	22		7	8	5	7	27
JD	4	6	5	6	21		10	9	8	9	36
FM	8	1	6.5	6.5	22		9	8	10	10	37
PM	7	5	10	9	31		10	8	7.5	10	35.5
NT	-	-	-	-			7	7	7	10	-
MT	-	-	-	-			6	6	6	4	-

Appendix 4 (contd)

Winter Leavers 2005

Sect.1 Qu.3 Entry questionnaire	SELF	TEACHER	FRIEND	PARENT	TOTAL	Sect.3 Qu.1 Exit questionnaire	SELF	TEACHER	FRIEND	PARENT	TOTAL
AC	7	5	7	5	-		-	-	-	-	-
SF	7	5	10	8	-		-	-	-	-	-
LR	4	4	5	3	-		-	-	-	-	-
MB	1	1	1	3	-		-	-	-	-	-
SS	4	4	2	5	-		-	-	-	-	-
DR	6	1	10	3	-		-	-	-	-	-
TT	5	3	4	1	13		5	4	4	3	16
DM	8	9	10	7	34		9	8	7	8	32
TW	1	4	9	6	20		7	8	7	8	30
LS	5	5	10	8	28		9	7	5	7	28
NM	5	3	5	4	17		7	7	7	8	29
SG	4	3	7	3	17		9	9	8	9	35
SH	-	-	-	-	-		10	6	8	10	-
MT	-	-	-	-	-		7	7	7	7	-

Appendix 5

Tables of raw scores – Self Perception on ‘ How well I managed’

Section 1 question 3 only – Data for Group comparability check.

Summer Leavers 2005

	<u>Self</u>	<u>Teacher(s)</u>	<u>Friend(s)</u>	<u>Parent(s)</u>
SA	3.5	4	5	4
LH	4	2	3	4
AW	4.5	5.5	1.5	3.5
KW	4	1	6.5	3
SR	8	5	3	8
LMD	7	5	4	6
JD	4	6	5	6
FM	8	1	6.5	6.5
PM	7	5	10	9

Winter Leavers 2005

AC	7	5	7	5
SF	7	5	10	8
LR	4	4	5	3
MB	1	1	1	3
SS	4	4	2	5
DR	6	1	10	3
TT	5	3	4	1
DM	8	9	10	7

Appendix 5 (contd)

	<u>Self</u>	<u>Teacher(s)</u>	<u>Friend(s)</u>	<u>Parent(s)</u>
TW	1	4	9	6
LS	5	5	10	8
NM	5	3	5	4
SG	4	3	7	3

Appendix 6

Kolmogorov-Smirnov Distribution calculations

Section 1 question 3 - group comparability check calculations

'Self' perception scores

	1	2	3	4	5	6	7	8	9	10
$S_9(x)$	0/9	0/9	1/9	5/9	5/9	5/9	7/9	9/9	9/9	9/9
$S_{12}(x)$	2/12	2/12	2/12	5/12	8/12	9/12	11/12	12/12	12/12	12/12
Difference	.16	.16	.05	.14	.11	.20	.15	0	0	0

$$\begin{aligned} \text{At } 0.05 \text{ level of significance } \quad D &\geq 1.36 \sqrt{(n_1 + n_2) / n_1 \times n_2} \\ &= 1.36 \sqrt{(9 + 12) / 108} \\ &= 0.5997 \end{aligned}$$

Largest $S_{n1}(x) - S_{n2}(x) = 0.2$ which is < 0.5997 (two-tailed test)

Therefore H_0 cannot be rejected.

'Teacher' perception scores

	1	2	3	4	5	6	7	8	9	10
$S_9(x)$	2/9	3/9	3/9	4/9	8/9	9/9	9/9	9/9	9/9	9/9
$S_{12}(x)$	2/12	2/12	5/12	8/12	11/12	11/12	11/12	11/12	12/12	12/12
Difference	.06	.17	.09	.23	.03	.08	.08	.08	0	0

Largest Difference $S_{n1}(x) - S_{n2}(x) = 0.23$ which is < 0.5997 (two-tailed test)

Therefore H_0 cannot be rejected.

'Friend(s)' perception scores

	1	2	3	4	5	6	7	8	9	10
$S_9(x)$	1/9	1/9	3/9	4/9	6/9	8/9	8/9	8/9	8/9	9/9
$S_{12}(x)$	1/12	2/12	2/12	4/12	5/12	5/12	7/12	7/12	8/12	12/12
Difference	.03	.05	.17	.11	.26	.48	.31	.31	.22	0

Largest Difference $S_{n1}(x) - S_{n2}(x) = 0.48$ which is < 0.5997 (two-tailed test)

Therefore H_0 cannot be rejected.

Appendix 6 (contd)

'Parent(s)' perception scores

	1	2	3	4	5	6	7	8	9	10
$S_9(x)$	0/9	0/9	2/9	4/9	4/9	7/9	7/9	8/9	9/9	9/9
$S_{12}(x)$	1/12	1/12	5/12	6/12	8/12	9/12	10/12	12/12	12/12	12/12
Difference	.08	.08	.19	.06	.23	.02	.06	.11	0	0

Largest Difference $S_{n1}(x) - S_{n2}(x) = 0.23$ which is < 0.5997 (two-tailed test)

Therefore H_0 cannot be rejected.

Appendix 7

Exemplar of Effect Size Calculation of Stochastic Superiority (A_{XE}).

(Vargha & Delaney, 2000)

Self Perception Scores

The ranked scores from the Summer and Winter Groups (Appendix 5 above) who completed both entry and exit interviews ($n_E = 11$, $m_X = 11$) are combined to give one ranked series.

Entry Scores - 1 4 4 5 5 5 7 7 8 8 8 ($n_E = 11$)

Exit Scores - 5 6 7 7 7 9 9 9 9 10 10 ($m_X = 11$)

Combined Ranked Scores	Ranks	Entry - E Or Exit - X
1	1	E
4	2.5	E
4	2.5	E
5	5.5	E
5	5.5	E
5	5.5	E
5	5.5	X
6	8	X
7	11	E
7	11	E
7	11	X
7	11	X
7	11	X

Appendix 7(contd)

8	15	E
8	15	E
8	15	E
9	18.5	X
9	18.5	X
9	18.5	X
9	18.5	X
10	21.5	X
10	21.5	X

$$\begin{aligned}A_{XE} &= (\sum R_X / m_X - (m_X + 1) / 2) / n_E \\ &= (163.5 / 11 - (11 + 1) / 2) / 11 \\ &= \mathbf{0.80}\end{aligned}$$

R_X – Rank of Exit Scores

Appendix 8

Notes on Case Example regarding Chaos Theory

Example of psychologist using a scaling prompt during a meeting between school support staff, parents and their daughter.

The school staff were convinced in their view that the young person did not want to attend school, as evidenced by significant non-attendance, and was showing no commitment to being there. The meeting had begun with the school staff remonstrating with the girl that she clearly should be out of school and tried convincing the psychologist and parent that she should be placed elsewhere. The psychologist slipped a piece of paper with a 1-10 scale drawn indicating 'I have no wish to be at school' at 1 and 'really want to attend school' at 10. Without any words being used, the girl marked a cross at 8. The school staff and parent were completely taken aback by this statement of commitment from the girl and the whole tenor of the meeting changed. Questions regarding what would help the girl achieve this commitment became the focus of the meeting. The girl thereafter started attending regularly with support from the staff who had been convinced she should have been elsewhere. There was no need for further input from the psychologist.

This could be construed of as an example of the 'butterfly' effect working in a school meeting. If we try to utilise a chaos theory approach to modelling this interaction, the following can be shown:

Appendix 8 (contd)

Initial conditions:

The drive of the staff initially to convince the others at the meeting of the need to remove the girl officially from the school – they were stuck in one view;

The need of the girl to attend school not being heard – unutilised energy not available to the system;

The ambivalence of the parent – being drawn into the school view;

The neutrality of the psychologist.

The initial scenario displays an opposing tension between the staff's stated need to remove the girl and the girl's need to attend the school

Process:

Prompted by the psychologist, the main processes are:

seeking clarification;

supporting communication (as a subset of supporting communication, the realisation by the psychologist that there is a hidden tension between the power of the school staff in their assumed mastery of verbal language and expression and the girl, and probably her parents, of being effectively silenced by this power imbalance);

the use of a highly effective visual prompt to allow the girl to express her views without entering into the verbal power arena controlled so effectively by the school staff;

the registering by the staff (and the parent) of this communication from the girl;

Appendix 8 (contd)

the sidestepping by the psychologist of a potentially damaging verbal argument with the school staff where she could have been drawn into the role of false advocate for the girl (the psychologist having the dual role of council employee, with the school also as a 'client').

Outcome:

A significant shift in view of the staff (and probably the parent) from trying to validate an exclusion of the girl from the school to restoring a supportive role in including her back into the body of the school. The girl was included successfully back into the school over the long term.

How can Chaos Theory help in the modelling of this interaction? Does this model add value or clarification to the description of what is happening? In particular does identifying the significant features of the interaction in Chaos Theory terms benefit future approaches to intervening in socially complex situations?

Chaos theory would suggest that a small perturbation in the initial conditions of an interaction can result in quite significant changes further on in the interaction. The problem is identifying the key features of the interaction which are general enough to be relatively easily identified and which are transferable to new situations.

In this example the key features are:

1. the verbally expressed views of the school staff

Appendix 8 (contd)

2. the relative ease of the school staff in using verbal language as a tool of expression
3. the opposite situation, that is, the dis-ease applying to the girl and parent
4. the tension set up between the opposing power bases
5. the role of the psychologist
6. the shift to a new form of expression
7. the rebalance of power instigated by this intervention
8. the major shift of view of the school staff
9. the long term effect of such a significant change.

What general features from the model could be transferred?

A situation which identified:

- a) A relatively stuck process characterised by tension between participants sustained by the differing power within one mode of communication
- b) A potential catalyst (the psychologist) helping input of new energy into the situation – the girl's communication
- c) A minimally intrusive intervention leading to a significant shift in perceptions
- d) The new mode of communication sustaining this shift.

The initial situation seems trapped in a limit cycle attractor with the potential for people to argue around (continually re-visit) the same behaviours, sustained by the staff's verbal power – (a)

Appendix 8 (contd)

The input of new energy into the system to move it away from the current attractor to a new state on the edge of equilibrium. (The psychologist likened the staff's and parent's response to the girl's marking of an '8' on the scale to one of shock) – (b)

The registering of the import of the '8' moving the situation towards a new chaotic attractor by virtue of new energy input – (c)

The recursive nature of the positive feedback loop from staff and parent to the young person helping sustain the new attractor – (d)

It would seem then that for practising psychologists, they can utilise this model by:

- a) identifying the sources of the tension in a conflict situation
- b) act as catalysts possibly to help increase that tension for a short time
- c) register the mechanics of the new state, for example, by naming it
- d) monitor the shift to a new state and support it as in (c)

This is not dissimilar to the normal work of the psychologist. The caveat would be part (b) 'acting as a catalyst'. To achieve this it is helpful to refer to the definition of a catalyst in the physical sciences:

'A substance which increases the rate of a (chemical) reaction while remaining unchanged itself.' (Oxford University, 2001)

Appendix 8 (contd)

This example, using the scaling diagram, exemplified this form of catalytic role by the psychologist where she established a significant change in the energy flow within the system prevailing without being drawn into the current system dynamic. As indicated, she was not drawn into the verbal dialogue with the school staff, potentially acting as an uninvited advocate for the girl. This could have led to further maintenance of the situation by becoming a part of the 'reaction' (sic), that is, the limit cycle attractor. This could have resulted in either a verbal argument trying to persuade the school staff to make further allowances for the girl or succumbing to their view of removing the girl from the school.

In that role she would become part of the limit cycle attractor and continually be circulating around the same argument of 'to move the girl or not' with staff and parents. Instead she took part in the interaction by stimulating the girl to express her views appropriately and with some impact. In many ways, the psychologist was unchanged by the interaction. What this ultimately led to was a new dynamic – the teachers becoming supportive of the girl's commitment to stay in the school, which created its own positive feedback to maintain a new equilibrium - long term inclusion (Goerner, 1995).

APPENDIX 9

PROGRAMME FOR ALTERNATIVE VOCATIONAL EDUCATION (PAVE)

GENERAL INFORMATION

Pupils are identified by school guidance and education psychology staff and the referral is discussed in the School Liaison groups (SLG); a cross professional group which is responsible for assessing pupils experiencing difficulty, in each secondary school, and making appropriate provision. Parents and young people are invited to join these discussions to ensure support. Referrals are made to the PAVE Admissions group, consisting of the Education Psychology, Pupil Support and Midlothian Training Services staff. This group prioritises referrals, assesses the level of need, using further background information, and decides on suitable candidates. Information is gathered from Social Work, Children's Panel, Educational Welfare, Police and Health. Each candidate is interviewed and places are offered on the basis of need. Successful applicants are inducted and an Individual Education Plan, specific to their needs, is negotiated with the young person. Information gathered from the different agencies is used in the compilation of tailored packages of support and education. Action planning is undertaken as part of the progress review and feedback system which consists of monthly 1:1 interviews, at which evidence is jointly considered by teacher and pupil, credit given for achievement of milestones which have been previously agreed, and new targets set. Structured groupwork is used to provide a context for interpersonal skills development. Feedback will be offered to all pupils on their performance. This may include use of video, tape or written recording and its discussion individually or in a group.

The project will be structured as follows:

Initially referral will come through School and Education Psychology. Referrals are then prioritised based on individual need. Further information is gathered from a variety of professional organisations, which leads to compilation of an Individual Education Plan.

Negotiation with students will produce an individual education plan (IEP) consistent of the recommendations of the Beattie committee and current practise in schools. The IEP will ensure pupils choices and needs are met through a balanced programme, including the following elements:

- Training in their chosen vocational area will be delivered through Council Skillseekers programmes, suitably adapted to 15 year olds.

APPENDIX 9 (contd)

- Work experience will be offered relevant to their vocational area, or in a simulated work environment within current programmes of the Council.
- Core skills training delivered by qualified GTC teaching staff, through SQA Skillstart Access 3 award, and / or SQA English/ Maths Standard Grade.
- Personal and Social Development, programme is geared towards the needs of the individual and involves students working alone and in groups. (ASDAN PSD award scheme, accrediting organisational and life skills).
- ‘ The Tree of Knowledge ‘ package, building confidence and self-esteem, raising awareness of the need for lifelong learning.
- Residential experience, building team skills and developing inter personal abilities.
- Employability coaching, addressing timekeeping, attendance, health and safety, first aid (Heartstart)
- Counselling and support is linked to a formal review and informal feedback process. Individual progress milestones are established with each young person and they are encouraged to reflect on goals achieved. Such milestones might include; listening effectively; taking turns in group discussions; use of appropriate language; conflict resolution; managing emotions; contributing to the team; problem solving; respecting the views of others.
- Access to Careers staff before, during and after participation in the programme, supports the students with the development of career guidance and job seeking skills.
- A dedicated computer training suite raises awareness and improves ICT skills.
- Specialist support from Educational Psychology, Local Integration Teams, Social Work, Children's Panel Reporter, Housing Officers, Police and Health will be offered as required. These support arrangements are currently in use as part of the programme.

AFTERCARE

Staff with whom the pupil has developed the most effective working relationship will provide aftercare. It will include support for jobsearch activity, continuing mentoring and drawing in external agencies, including the Careers Company, to provide guidance services. The role of project staff will be to continue to assist the pupils in identifying barriers to progress and tactics to overcome these. In addition, staff will act as advocates on behalf of pupils where required. In this way they will assist the pupils in dealing with housing, employment, income management or other needs. The aftercare period will depend on need, although it is expected to continue for three to six months after completion of the project. Experience has shown that, during this time, the pupils find the transition most difficult and they therefore require support. The majority of PAVE students progress on to the Council's or College's Skillseekers programmes, and greater contact is therefore possible to resolve issues on an ongoing basis. Close contact of this nature and the smoothness of the progression from pre-school leaver to post school training provision is one of the central benefits of this programme to ‘disorganised’ young people.

APPENDIX 9 (contd)

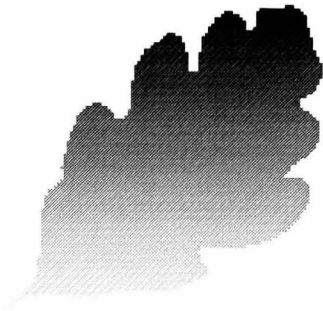
OUTCOMES

The project will address the needs of disaffected pupils in S4 (excluded or non-attending), who research has shown, are least likely to return to learning later in life given their negative feelings about schooling, and the resulting attitude to learning this produces. The focus of the project on support in transition is intended to promote the view that learning can be useful throughout life, by practical application of this in their lives. The secure environment of the project promotes progression to Skillseekers or other forms of further education, thus supporting the attitude that Lifelong learning is a positive and creative thing to undertake. Where students are able to move directly to employment, with appropriate support and aftercare, work will be undertaken with employers to emphasise the positive aspects of continuing learning and development for the young people and the company concerned. This will be undertaken as part of the general services offered by the Council to small business. The programme supports the Midlothian Community Learning Strategy, which has identified the transition points in peoples lives as key moments for intervention by the Council and it's partners in the delivery of lifelong learning.

As a personal development and support service, as well as an education and vocational training provision, the emphasis on qualification outcomes does not reflect the achievement by students of personal goals in their lives. These are reflected in the Individual Education Plan, and recorded jointly with the student and the PAVE staff. Goals may be very simple - regular attendance, appropriate language, dress, attitude to instruction, or more complex, reduced drug use, improved relationships with parents peers or authority. Each will be individually consistent with the needs of the student.

The outcomes anticipated will be increased attendance, improved behaviour, achievement of a level of qualification appropriate to the individual abilities. Completion of Standard Grades, at foundation/general level, Higher Still units or ASDAN certification (a national awards system for personal development) are possible positive outcomes.

Appendix 10



Midlothian

PAVE

Information for Parents / Carers



PROJECT PART-FINANCED
BY THE EUROPEAN UNION

Europe and Scotland
Making it **work together**

Appendix 10 (contd)

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What is Education Support?

What are Work Placements?

What is Personal and Social Development (PSD)?

What if I need further information?

Appendix 10 (contd)

What is PAVE?

PAVE stands for Programme for Alternative Vocational Education.

What is it about?

PAVE aims to bridge the gap between school and work by giving the students the chance to gain the skills that employers are looking for. It provides a combination of:

- Educational support to help students gain qualifications in the core skills
- Work placements to help the students gain work related skills
- Personal and social development programme to help the students gain the skills that employers are looking for

Who is it for?

It is for students in S4/5 who, are due to leave school in the summer or winter, want to gain the skills that are needed to make the move from school to work. Some of the students may have been excluded from school or are at risk of exclusion. All students must be referred to PAVE by their school or the Pupil Support Service.

Where is PAVE?

PAVE is based in:

Midlothian Training Services
76 High Street
BONNYRIGG
EH19 2AE

How do I contact PAVE?

Telephone: 0131-561-9941

0131-454-0050

Fax: 0131-454-0680

Who are the staff involved?

MTS. Co-ordinator
Senior Teacher
Support Teacher
Support Worker
Classroom Assistant
Community Education Worker

We also have a team of vocational instructors and other support staff

Appendix 10 (contd)

What about timetables?

Each student will be given a timetable when they start. This timetable will give places and times where the students have to be each day. The timetable will not change while the student is at PAVE. Parents will be given a copy of the timetable.

What about attendance and absences?

All students are expected to attend every day. If a student is off sick they must phone PAVE **before** 10am. If the student is due to be at their work placement that day they must also phone the employer / instructor. If a student needs to be absent for any other reason (for example Appointments) they must inform staff in advance.

What about allowances?

Students will be given a lunch allowance of £3 per day. They will also be given a £10 bonus each week if they have attended every day and been on time. All allowances will be paid into the student's bank account each Thursday. Students will lose both their £3 lunch allowance and the £10 bonus if they are absent or late during the week.

What about transport?

PAVE gives each student a free bus pass for use on First Bus services. All students are responsible for making their own way to PAVE / work placements etc. If students lose their bus pass they will be responsible for their own bus fares for the period that the pass was issued.

What about Health and Safety?

Parents and students will be asked to sign an agreement before starting work placements. This agreement will contain details of the risk assessment and Health and Safety information. All students will be given basic training in Health and Safety. Students will be provided with any protective clothing required for the placement. Students must bring their protective clothing when on work placements and wear it at all times.

What about Reviews?

PAVE staff will informally review student's progress on a weekly basis. Once each month staff and students will discuss progress and complete a written review. Monthly reviews will be sent to parents. Parents are encouraged to contact PAVE staff at any time if they have any concerns about progress.

What are Individual Education Plans (IEP's)?

IEP's are created at the beginning of PAVE after discussions between the students and staff. An IEP is a record of all the different supports that will be put into place to help students while they are at PAVE. As part of the IEP process students are asked to set long and short-term targets which they aim to complete before leaving PAVE. These targets will be reviewed every 6-8 weeks. Parents can request copies of the IEP at any time.

Appendix 10 (contd)

What is Education Support?

Education support takes place 1 day each week from 8.30am until 3.30pm. There is a maximum of 5 students in each group with 2 members of staff available to provide support. During the day the students will work, at their own pace, winter leavers will work towards SQA qualifications in the core skills of Communication, Numeracy, ICT and Problem Solving and summer leavers will work towards St Grades in Maths, and English. The students will also complete units in work related skills such as Finding and Keeping a Job.

What are Work Placements?

Work placements usually take place for 3 days each week. The hours are generally from 8.30am until 4pm although these vary depending on the work placement. Work placements could be in a MTS, Workshop or with an employer in the local area. While the students are on work placements they will be given real work experience and appropriate training from a qualified instructor or supervisor. Students will be expected to behave in an adult manner while on work placements. The students will be provided with appropriate protective clothing and they will be expected to follow all the Health and Safety instructions.

What is Personal and Social Development (PSD)?

PSD sessions take place for ½ day each week. The hours are from 8.30am until 1.00pm. During the PSD sessions the students will develop their personal and social skills through group discussions, activities and individual work. The students will work towards the ASDAN Bronze or Silver Award which will accredit their skills development. The PSD sessions will also include careers and job search advice.

What if I need further information?

Please contact any member of staff on 0131-561-9941 or 0131-454-0050. The office is open from 8.00am until 4.30pm Monday to Thursday and 8.00am until 3.30pm on a Friday.

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