An Anatomy of Peer Learning:

An examination of the implementation, operation and significance of Peer Support at Newham College of Further Education

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ABSTRACT

The research contained in this PhD examines peer learning at Newham College of Further Education.

The implementation of peer learning in the college is examined. It is demonstrated how a more successful approach to implementing peer learning was developed by involving managers, teachers and students in designing their own schemes of peer learning.

A case study of the two peer learning schemes is described. It is shown that both schemes significantly improved students' academic performance when prior academic performance and approaches to studying were controlled for. However, despite having similar structures, the schemes appealed to different kinds of students. This illustrated how peer learning schemes are affected by the contexts in which they operate and the need to research them with reference to this context.

It is demonstrated how peer learning both reflected and challenged traditional divisions of teaching and learning. It reflected these divisions in two ways. The peer facilitators' teaching role and the learning role of the students facilitated were reflected in the different ways their involvement in peer learning affected their approaches to studying. Also, people's views of peer learning reflected their views of teaching and learning more generally. However, the peer facilitators, by learning as they taught, began to see the role of learners as involving elements that previously they had seen as the preserve of teachers. The implications of these findings for approaches to teaching and learning are explored.

In conclusion, it is argued that peer learning schemes need to be viewed within the wider context of teaching and learning. As such, they are part of the tools that teachers and learners can use to support their work, rather than being a magical cure for poor levels of retention and achievement.
**TABLE OF CONTENTS:**

**ACKNOWLEDGEMENTS**

**CHAPTER ONE: PEER LEARNING AT NEWHAM COLLEGE OF FURTHER EDUCATION:**

**AN INTRODUCTION**

1.1 Introduction 11

1.2 Reasons for the Introduction of Peer Support 12

1.3 My Involvement in Peer Support 16

1.4 An Outline of the Research Chapters 20

1.6 Conclusion to an Introduction to Peer Learning at Newham College of Further Education 22

**CHAPTER TWO: LITERATURE REVIEW**

2.1 Introduction 23

2.2 Setting Parameters 24

2.3 A Summary of Past Reviews of the Research into the Effectiveness of Peer Learning 28

2.4 The Implementation of a College-Wide Peer Learning Strategy 30

2.5 Researching Individual Peer Learning Schemes 40

2.6 The Wider Significance of Peer Learning for Teaching and Learning 49

2.7 Criterion for Researching Peer Learning 62

2.8 Conclusion 63

**CHAPTER THREE: RESEARCH DESIGN**

3.1 Introduction 65

3.2 Research Methods used in Chapter Four: Implementing Peer Learning 67
CHAPTER FIVE: A CASE STUDY OF PEER LEARNING SCHEMES

5.1 Introduction

5.2 Research Questions

5.3 How did Peer Support operate on 'A' level Science?

5.4 Did students with particular levels of previous academic achievement use PS?

5.5 Did students with particular approaches to studying use PS?
5.6 Did students who used PS perform better academically than students who did not use PS? 173

5.7 Conclusion to Chapter Five 186

CHAPTER SIX: THE SIGNIFICANCE OF PEER LEARNING FOR TEACHING AND LEARNING 191

6.1 Introduction 191

6.2 Research Questions and the relationship between teaching and learning 193

6.3 Peer Support and students' approaches to studying 195

6.4 Peer Support and its effects on Peer Supporters' Constructs of Teaching and Learning 209

6.5 The Institutional Managers’ views of teaching and learning and their relationship to their views on Peer Support 224

6.6 Conclusions 233

CHAPTER SEVEN: CONCLUSIONS 239

7.1 Introduction 239

7.2 Originality in this PhD 240

7.3 Review of the effectiveness of the research approach 244

7.4 Review of Research Findings 248

7.5 Possibilities for peer learning 254

7.6 Concluding Remarks 258

REFERENCES 262

APPENDIX I: QUESTIONNAIRE TO STUDENTS OFFERED PS 279

APPENDIX II: PEER SUPPORT USER QUESTIONNAIRE FOR 2ND YEAR ‘A’ LEVEL SCIENCE STUDENTS 281

APPENDIX III: PEER SUPPORT QUESTIONNAIRE 282
Appendix IV: Questions asked in the Peer Supporter Group Interview

Appendix V: Peer Supporter Journal Outline

Appendix VI: A Sample Repertory Grid

Appendix VII: Questionnaire to Peer Support Link Teachers

Appendix VIII: The Interview Questions for the Institutional Managers

Appendix IX: Richardson’s (1990) Approaches to Studying Questionnaire

Appendix X: Peer Supporter Briefing

Appendix XI: Participants in Each Stage of the Research Process

Appendix XII: A Summary of the Advantages and Limitations of an Action Research Approach

Tables:

Table 3.1. A Matrix of the research methods used in each chapter with the different participants in the research

Table 4.1: A comparison of the number and diversity of peer learning schemes under the two implementation strategies

Table 4.2: Take up of Peer Support compared to SI

Table 4.3: Peer Support & SI Users response to “What is Peer Support / SI?”

Table 4.4: Peer Support & SI Non-Users response to “What is Peer Support / SI?”

Table 4.5: Peer Support & SI Non-Users responses to “Why did you not attend?”

Table 4.6: Number of SI leaders / PSers and their feedback

Table 4.7: Benefits students felt they gained by being a SI leader / PSer

Table 5.1: Take up of peer learning on ‘A’ Level Science 1993-1998

Table 5.2: 1st Year ‘A’ level Science PSUs responded to the question ‘Why did you attend PS?’

Table 5.3 Spearman’s Rho Correlations between GCSE Scores and Performance in promotional exams for Y1s

Table 5.4: Mean MSE GCSE Scores for Y1 Non-PSUs and PSUs and the Wilcoxon Mann Whitney Test comparing the two groups

Table 5.5 Spearman’s Rho Correlations between MSE GCSE Scores and Attendance at PS for Y1s
Table 5.6: Mean MSE GCSE Scores for Y2 Non-PSUs and PSUs and the Wilcoxon Mann
Whitney Test comparing the two groups 162
Table 5.7: Spearman's Rho Correlations between MSE GCSE Scores, Promotional Exams and
Attendance at PS for Y2s. 162
Table 5.8: Mean Meaning Orientated Scores for Y1 Non PSUs and PSUs and the Wilcoxon
Mann Whitney Test comparing the two groups 167
Table 5.9: Mean Reproducing Orientated Scores for Y1 Non-PSUs and PSUs and the Wilcoxon
Mann Whitney Test comparing the two groups 167
Table 5.10: Spearman's Rho Correlations between Students Scores on Approaches to Learning
Questionnaire and Attendance at PS for Y1s 168
Table 5.11: Mean Meaning orientated Scores for Y2 Non-PSUs and PSUs and the Wilcoxon
Mann Whitney Test comparing the two groups 170
Table 5.12: Mean Reproducing Orientated Scores for Y2 Non-PSUs and PSUs and the Wilcoxon
Mann Whitney Test comparing the two groups 170
Table 5.13: Spearman’s Rho Correlations between Students Scores on Approaches to Learning
Questionnaire and Attendance at PS for Y2s 170
Table 5.14: Spearman’s Rho Correlations between Meaning Orientated and Reproducing
Orientated Scores and Performance in Promotional Exams for Y1s. 172
Table 5.15: Spearman’s Rho Correlations between Meaning Orientated and Reproducing
Orientated Scores and ‘A’ level Grades for Y2s. 173
Table 5.16: Benefits Y1s who used PS reported from attending the sessions 175
Table 5.17: Mean Promotional Chemistry Examination Results for Y1 Non-PSUs and PSUs and
the Wilcoxon Mann Whitney Test comparing the two groups 178
Table 5.18: Mean Promotional Mathematics and Statistics Examination Results for Y1 Non-
PSUs and PSUs and the Wilcoxon Mann Whitney Test comparing the two groups 178
Table 5.19: Spearman’s Rho Correlations between Students’ Marks in the Promotional Exams
and Attendance at PS for Y1s. 179
Table 5.20: Spearman’s Rho Correlations between Students Promotional Exam Results and
Attendance at PS for Y1s split by MSE GCSE Quartiles 180
Table 5.21: Mean Chemistry ‘A’ Level Grades for Y2 Non-PSUs and PSUs and the Wilcoxon
Mann Whitney Test comparing the two groups 183
Table 5.22: Mean Biology ‘A’ Level Grades for Y2 non-PSUs and PSUs and the Wilcoxon Mann
Whitney Test comparing the two groups 183
Table 5.23: Spearman’s Rho Correlations between Students’ ‘A’ level Grades and Attendance at
PS for Y2s 184
Table 5.24: Spearman’s Rho Correlations between Students ‘A’ Level Results and Attendance at
PS for Y2s split by MSE GCSE Quartiles. 184
Table 6.1: The ranks of the differences between post and pre test scores on ASQ for Non-PSUs

Table 6.2: The ranks of the differences between post and pre test scores on ASQ for PSUs

Table 6.3: Test Statistics on the ranks of differences between post and pre test scores on the ASQ for Non-PSUs and PSUs

Table 6.4: Sub-scales in Richardson’s (1990) Approaches to Studying Questionnaire

Table 6.5: The ranks of the differences between post and pre test sub-scale scores on ASQ for Non-PSUs

Table 6.6: The ranks of the differences between post and pre test sub-scale scores on ASQ for PSUs

Table 6.7: Test Statistics on the ranks of differences between post and pre test sub-scale scores on the ASQ for Non-PSUs and PSUs

Table 6.8: The ranks of the differences between post and pre test scores on ASQ for Psers

Table 6.9: Test Statistics on the ranks of differences between post and pre test scores on the ASQ for Psers

Table 6.10: The ranks of the differences between post and pre test sub-scale scores on ASQ for Psers

Table 6.11: Test Statistics on the ranks of differences between post and pre test sub-scale scores on the ASQ for Psers

Table 6.12: A PSers description of his constructs and how they were subsequently categorised.

Table 6.13: The number of constructs elicited from each ‘A’ level Science teacher divided into those relating to self and those relating to others and how many were ranked as important in teaching and learning in the two grids.

Table 6.14: The number of constructs elicited from each PSer divided into those relating to self and those relating to others and how many were ranked as important in teaching and learning in the two grids.

Table 6.15: The number of constructs elicited from each non-PSer divided into those relating to self and those relating to others and how many were ranked as important in teaching and learning in the two grids.

Table 6.16: The change in each PSers grids in the constructs that were ranked as important in teaching and learning divided between those relating to self and others.

Table 6.17: The change in each non-PSers grids in the constructs that were ranked as important in teaching and learning divided between those relating to self and others.

Table XI.1: The participants in ‘Implementing Peer Learning’

Table XI.2: The participants in ‘A Case Study of Peer Learning scheme’s and ‘The Significance of Peer Learning for Teaching and Learning’
GRAPHS:

Graph 4.1: The Number of peer learning schemes operated by year 111
Graph 4.2: Number of peer learning sessions offered by year 115
Graph 4.3: Number of students who attended at least one and at least three peer learning sessions by year 115
Graph 5.1: Percentage of non-PSUs and PSUs in each Quartile of MSE GCSE’s for Y1s 160
Graph 5.2: Percentage of non-PSUs and PSUs in each Quartile of MSE GCSE’s for Y2s 163

FIGURES:

Figure 4.1: Action Research Loop adapted from Zuber-Skerrit (1996) p. 95 93
Figure 6.1: A comparison of the two grids elicited from a PSer 211
Figure 6.2 A PSer’s first repertory grid which has been focused 212
Figure 6.3 A PSer’s second repertory grid which has been focused 213
ACKNOWLEDGEMENTS

My intellectual debts are numerous. In terms of peer learning my starting point was Supplemental Instruction. Although at times I am critical of aspects of this approach, I am grateful to those involved in SI who have helped me to develop my understanding of peer learning. My views of persons, teaching and learning, and research have been informed by those far more able than myself. The title of this thesis “An Anatomy of Peer Learning” deliberately refers to Abercrombie’s (1960) “The Anatomy of Judgement”. The approach taken to teaching and learning in this excellent book is one that has been a source of inspiration for me. Equally, Lave and Wenger’s (1991) work on learning as legitimate peripheral participation offered a whole new way of conceptualising teaching and learning and so by extension peer learning. I came to Lave and Wenger through the work of Vygotsky (1986). Although I have not referred to him often, the elegance of his work and his thoughtful approach to issues of the relationship between thought and language convinced me of the possibility of beauty within academic rigour. G.A.Kelly’s (1955) work struck a similar chord whilst setting out a compelling view of the way in which people operate as persons. Finally, Lewin’s (1952) work on organisational change has helped me to develop my views on how to implement peer learning.

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Paul Ashwin

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CHAPTER ONE: PEER LEARNING AT NEWHAM COLLEGE OF FURTHER EDUCATION: AN INTRODUCTION

1.1 Introduction

In this chapter I give my definition of peer learning. At this stage I simply give the definition saving a fuller explanation for my literature review (see Section 2.2.2). I also explain the other terms relating to peer learning in the college. I then set out the reasons that the college introduced peer learning schemes to students and staff. I look at these in terms of the changes in the role of learners in post-sixteen education, pressures that have been particular to the Further Education (FE) sector, and factors that were particular to the college itself. I then describe my position in the college in implementing peer learning as this has undoubtedly affected the particular form of peer learning that has been developed in the college. I set out how my research approach, and understanding of peer learning, has developed over the time I have been involved in learning. I set this in the context of my changing understanding of the relationship between teaching and learning. Finally, I give an overview of the research chapters in this PhD and give a brief indication of my findings.

1.1.2 Definition of peer learning

Peer learning amongst students in educational settings is defined as:

occurring in any formalised interaction where students are facilitated by other students who are studying, or who have recently studied, the same learning material or at the same institution, and where the support offered reflects the manner in which the students are peers and is mutually beneficial to the students who act as facilitators and the students who are facilitated.

The elements that make this up will be considered in more detail in my literature review, but this definition should suffice for what follows in the rest of this chapter.

1.1.2 An explanation of other terms

Peer learning occurs in any situation that fits the above definition.

Peer facilitators are the students who facilitate their peers.
Supplemental Instruction (SI) is an American peer learning scheme that originated in the University of Kansas City, Missouri (UMKC). SI is one approach to peer learning. It is described in Section 4.5.1. This was the original peer learning scheme that was implemented at Newham College. The experience of implementing SI led to the development of Peer Support.

The SI implementation Strategy was the strategy that was used to promote cross college SI schemes at Newham College of Further Education.

SI users are the students who attend SI sessions that are led by the SI leaders.

SI leaders are the peer facilitators who are responsible for leading the SI sessions.

The SI Co-ordinator is the member of staff is responsible for co-ordinating SI schemes in the college.

Peer Support was developed out of the experience of running SI. It is broader than SI. It includes SI schemes but can refer to any peer learning schemes that are developed in the college.

The Peer Support implementation strategy is the strategy that is used to promote Peer Support schemes across the college. The Peer Support implementation strategy, as oppose to Peer Support schemes, is always referred to in full.

Peer Support (PS) schemes are the individual schemes that are developed as a result of the Peer Support Implementation Strategy.

Peer Supporters (PSers) are the peer facilitators who lead PS sessions.

Peer Support Users (PSUs) are the students who attend PS sessions that are led by the PSers.

The Peer Support Co-ordinator is the member of staff is responsible for co-ordinating PS schemes in the college.

Peer Support link teachers are the teachers who request PS on their courses. They are involved in designing the schemes and selecting PSers.

1.2 Reasons for the Introduction of Peer Support

Peer Support was introduced into Newham College of Further Education in September 1993. Its introduction can be seen as the result of three factors: changes in the role of learners in post-sixteen education generally, pressures that were particular
to the Further Education sector, and factors that were local to the college in terms of both the physical location of the college and the structure of the college as an organisation.

1.2.1 Changes in the role of learners in post-sixteen education

There has been a lot of pressure for the roles of learners in post-sixteen education to change over the past twenty years. The attention given to concepts such as ‘learner autonomy’ (Boud 1988), ‘experiential learning’ (Kolb 1984), and ‘androgagy’ (Knowles 1984) have led to a push for the role of learners to become more active in the teaching and learning process. The Enterprise in Higher Education Initiative (see Elton and Cryer 1994) led to many practical innovations in Higher Education that involved students being offered an increased voice in the organisation of their courses, and an increased responsibility for their own learning. How much has actually changed in practice is unclear because as Rudduck (1991) argues both teachers and students have invested in the existing system, and use counter strategies to safeguard its continuation. However, there has certainly been a change in what is seen as ‘good practice’ in promoting the learning of students in post-sixteen education. This led to an interest in educational innovations, such as peer learning, that attempt to put learners at the centre of the learning process.

1.2.2 Pressures within the Further Education system

Although Further Education is often seen as the Cinderella service in the education sector, the changes outlined above have not passed it by. For example Bolton (1994) reported that Barnsley College claimed itself to be a ‘learning’ institution rather than ‘teaching’ institution.

The incorporation of Further Education colleges led to an increased focus on value for money with a new funding council being established, The Further Education Funding Council (FEFC), that is responsible for both the funding and inspection of Further Education colleges. This renewed pressure for widening student access to Further Education, improving the retention and achievement of students, and the adopting of the notion of ‘students as customers’. This was coupled with the initial
moves towards the governmental policy of the promotion of life-long learning for all. This policy has grown with, for example, in the DfEE response to the Kennedy report on ‘Widening participation in Further Education’, the authors talking of the need for “changing the culture to a learning culture” (DfEE 1998 p. 20). At the same time there was the introduction of the new national vocational qualifications, and with them a focus on key skills. All of these factors led to a need to support learners through the learning process rather than simply offering traditional didactic teaching.

In this context it is not surprising that in 1993 the Further Education Unit (FEU) found that 80% of colleges intended to expand their learner services as the Further Education sector planned for an extra million learners over the following ten years. The FEU concluded, “Establishing cost-effective learner support services is therefore likely to be at the centre of institutional development for some time to come.”(FEU 1993 p.9)

In this context the idea of using students as a cost-effective way of supporting other students made peer learning more than just an educational good. It offered colleges a chance to boost retention and achievement and thus increase the chances of good inspection reports and maintaining funding. As competition between local colleges increased it also appeared to offer the opportunity of marketing colleges to prospective students.

1.2.3 Local Factors

The physical location of the college in Newham presented its own challenges. Newham was classified by the Department of Environment Local Conditions Index as the most deprived borough in England. According to the 1991 census from 1981-1991 employment fell by 23 per cent, 25 per cent of families in Newham were one-parent families and 76 per cent of lone parents were unemployed. There were about 15,000 refugees living in Newham from at least 20 different countries. In Newham schools there were at least 80 languages spoken. The level of students achieving 5 or

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1 All figures in this section are from F.E.F.C (1996)
more GCSE grades A-C was nearly half of the national average and the truancy rate amongst secondary school pupils is nearly four times the national average. The college served a very diverse range of students with 81% over 19 and 71% from ethnic communities. Thus with 80% of the college’s intake living in Newham, it is clear that there was not a strong tradition of successful learning within formal educational environments amongst the college’s students.

At incorporation the college was not in a strong financial position carrying a £181,000 deficit, about 1% of the college’s income. The college management responded to this by reorganising the college and shedding 120 posts. They increased the intake of students by implementing an open access policy, guaranteeing students a place on a suitable course.

In the ‘value for money’ climate of further education these factors made increasing retention and boosting achievement, whilst funding was falling, a major challenge for the college. The college’s strategy was to combine the need for financial security with a change in the colleges approach to teaching and learning. The role of teachers changed from that of traditional teachers to that of managers of the teaching and learning process. The number of permanent teaching staff was cut, and support services and investment in learning environments increased. Traditional teaching was increasingly supplemented with other forms of learning support, as students were expected to actively learn in a greater variety of learning contexts, many of which were supported by technicians and learning assistants rather than by teachers.

Within this context peer learning, initially under the auspices of the Supplemental Instruction (SI) scheme, was introduced to help to boost retention and achievement but also as part of the attempt to shift the emphasis in the college from teaching to learning.
1.3 My Involvement in Peer Support

1.3.1 My role in the college

I was employed to introduce the SI scheme into the college in 1993. I was responsible for the development and implementation of SI at the college. I was based centrally within a Student Services division and implemented schemes in partnership with teachers and students from particular courses within the college.

Through my experience of implementing and evaluating SI, I have developed a more generic Peer Support strategy. This strategy involved me working with students and staff, but rather than implementing a particular type of peer learning, as was the case with SI, the students and teachers developed their own schemes of Peer Support. This change in my approach to peer learning in the college was in part due to a change in my view of the relationship between teaching and learning.

1.3.2 The development of my research approach: A personal introduction

I decided to call this part of my introductory chapter 'a personal introduction' because I found the experience of 'doing' a PhD to be a personal journey. During my time researching and working with Peer Support in the college my ideas about the way in which to structure the research into, and running of, peer learning have developed, as my view of the relationship between teaching and learning have changed. Indeed the ways in which I have researched and operated Peer Support schemes have altered in line with my changing view of those involved in the teaching and learning process.

When I first began researching peer learning as part of my PhD under the auspices of the SI schemes in November 1995, I had a very simple view of what this task would involve. I saw SI schemes as separate entities in themselves rather than linked with the courses and institution of which they were part. Therefore, my research was to focus only on the students, the SI leaders and users, involved in peer learning. My
research plan involved the tracking of each SI scheme, to look at the quality of the SI sessions and the SI leaders understanding of their role. The outcomes of the students who used SI were to be compared with those who chose not to attend SI sessions.

At this stage, I treated teaching and learning as separate and chose only to focus on what the learners had learned, as measured by performance in exams. My research was not designed to take account of the different perceptions students might have of SI, but rather treated students’ perceptions as homogenous.

In January 1996 I began to look at SI in the context of the rest of the college by examining SI as a microcosm of the students’ course. I saw SI as a way of training students in how to be successful students on their course. However, I was again simply focused on the students and the outcomes for them, and I was still looking at learning in isolation from teaching.

I began to have my first major doubts about my initial approach in March 1996. I had excellent SI leaders but attendance at the sessions was low. I began to realise that the SI leaders and SI users viewed the SI sessions in very different ways and this led to a conflict of views of what the sessions should be about. The SI leaders’ role demanded that they help the SI users to find their own answers, whilst the SI users wanted the SI leaders to give them the answers. It became clear that a different approach to implementing peer learning was needed so that leaders and users could develop their understanding of peer learning together, so that this conflict could be avoided.

In April 1996, I began to see the different perceptions of the SI leaders and SI users as an issue around ownership. The SI leaders felt strong ownership of the scheme but the potential SI users saw the schemes as irrelevant to their needs. I also wanted to increase teachers’ ownership of the peer learning schemes that were run on their courses. I decided to offer teachers and students the opportunity to develop their own models of peer learning through offering them a range of Peer Support schemes. I had not thought about how I would research this approach to peer learning, but I had
recognised that both teachers and students were central to the successful operation of Peer Support schemes.

By June 1996, I began to think about how I might research this approach. I wanted to examine whether students and teachers developed ownership of Peer Support schemes by being involved in the development of the scheme. I wanted to examine how students and teachers talked about Peer Support to see if they related it to the rest of their course or saw it as separate. I also wanted to look at how much the PSers saw themselves as learners and how much they saw themselves as teachers. It was here that I began to focus on the relatedness of teaching and learning and began to research PS schemes from the point of view of the participants, which at this stage I took to be teachers and students.

In September 1996, my view of researching Peer Support became broader. I started to examine Peer Support as an example of organisational change. Through reading George Kelly’s (1955) work on personal constructs, I decided to use repertory grids to examine whether Peer Support could be used to promote changes in teachers’ and students’ perceptions of one another, and thus to challenge their existing notions of the roles of teachers and students.

However, I soon began to realise that there were several problems with this approach. First, Peer Support was such a small part of the educational lives of students and particularly teachers that it seemed unlikely to produce the sorts of changes I was beginning to look for. For example, it appeared likely that a students choice to attend a Peer Support session said more about the type of student they were, than their involvement in Peer Support leading to life changes in their approaches to education. Second, I was only using one research method, repertory grids, to investigate the impact of Peer Support. I began to realise that I could use a variety of research techniques to examine Peer Support, from a variety of research traditions without necessarily accepting the traditional analytical methods and interpretations of the data.
By October 1997, my view of Peer Support had considerably developed since the beginning of my PhD. I saw Peer Support as an opportunity for students to increasingly participate with their teachers in the teaching and learning environment. In this model teachers can be seen as expert *learners* of their subjects. Their role is to structure interactions and confer legitimacy on the activities of their ‘apprentice’ learners. As the students become more experienced they can take a greater part in the teaching-learning process. They can then move from the role of novice learner, and take on the role of peer facilitator, in which they have some responsibility for the learning of others, as well as for their own learning. This model is reminiscent of the experiments of Lancaster and Bell, two of the early pioneers of Peer Tutoring. In coping with a situation of huge classes, they used more advanced pupils as tutors to younger children. Many of these more advanced pupils went on to become full teachers (see Goodlad and Hirst 1989).

In this way peer learning can help to shift the way in which teachers and learners view their own, and each other’s, roles. These roles are no longer viewed as separate, but as different stages of a single role. This way of looking at peer learning leads to a particular approach to its evaluation, which differs from the ways that have been used before. This is because peer learning is viewed as part of the wider and *single* process of teaching and learning, rather than as a separate activity with discrete outcomes. This means that it needs to be researched from the perspective of the student, the peer facilitator, the teacher and the institution as a whole, and that it cannot be examined in isolation from the wider context of teaching and learning. In simply evaluating peer learning in terms of its effect on students’ academic performance or skill development, its symbiotic relation with the wider teaching and learning environment is ignored. Such an evaluation strategy would seem to suggest that the wider teaching learning environment has no effect on peer learning, and that peer learning has no effect on the wider teaching and learning environment.
1.4 An Outline of the Research Chapters

1.4.1 Chapter Four: Implementing Peer Support

At an institutional level my research questions are based around examining my implementation strategy for Peer Support in the college. The research question investigated in this chapter is:

1. Was the alternative Peer Support implementation strategy more effective than the initial SI approach to the implementation of peer learning schemes in the college when it is examined from the perspective of managers, teachers, peer facilitators and students, and my perspective as the peer learning co-ordinator?

In answering this research question I show that the Peer Support implementation strategy has been more successful than the SI implementation strategy from all of these perspectives. However, even though the Peer Support implementation has been more successful than the SI implementation strategy it still has a number of shortcomings. I suggest a way of further developing this strategy to overcome these problems.

1.5.2 Chapter Five: A Case Study of Peer Support Schemes

At an individual course level my focus was the work with teachers and students to develop particular schemes of Peer Support. At this level I looked at a case study of two PS schemes. Rather than simply focusing on outcomes the research in this part of the study I also focused on the process of Peer Support. Here, the questions I examined were:

1. How did Peer Support operate on ‘A’ level Science?
2. Did students with particular levels of previous academic achievement use Peer Support?
3. Were students with particular approaches to studying more likely to use Peer Support?
4. Did students gain from their involvement in Peer Support?

In this chapter I show that Peer Support can be effective in improving the academic performance of students across the ability range and with a variety of approaches to
learning. However, I show that PS schemes cannot be considered in isolation from the context in which they operate. I show that the both the structure of the PS scheme, the relationship between the PSers and the PSUs, the academic disciplines being studied, and the way these are assessed can all affect the outcomes of peer learning schemes. These findings re-emphasise the importance of students and teachers designing their own schemes of peer learning so that they fit with the contexts in which they are to operate.

1.5.3 Chapter Six: The Significance of Peer Support for Teaching and Learning

The third part of this study examines the relationship between participants’ attitudes towards teaching and learning and their views on Peer Support. The questions examined in this chapter were:

1. Did involvement in Peer Support affect peer support users’ and peer supporters’ approaches to studying?
2. Did involvement in Peer Support affect peer supporters’ constructs of teaching and learning? How did peer supporters’ constructs of teaching and learning relate to their fellow students’ and teachers’ constructs of teaching and learning?
3. Was there a link between institutional managers’ views of the roles of teachers and learners and their understanding of Peer Support? What are the prospects for the development of Peer Support within the institution?

I show that the approaches to studying of the PSUs and PSers change in different ways after their involvement in Peer Support. The PSUs become more strategic learners as they learn how to tackle and succeed on the course. The PSers become less reproducing orientated in their studies as they begin to see their subjects in a broader way and become more confident in their selves as learners. The PSers also changed their views of what is important in learning. They saw learning as more of a social, as well as an individual, process after being involved in Peer Support. However, their views on teaching did not change. Finally, I show that views of institutional managers of peer learning are informed by their views of teaching and learning. I show that the managers were split between those who held traditional views which separate the
roles of teachers and learners and those who saw teaching and learning as a continuum, in which the roles of teachers and learners can change from one context to another. Which of these views of teaching and learning prevails will have a profound affect on the approach taken to peer learning, and learning support more generally, in the college.

1.6 Conclusion to an Introduction to Peer Learning at Newham College of Further Education

In this introductory chapter I have defined peer learning and the other terms that relate to its operation within the college. I have shown why peer learning was introduced in the college. I have shown how my view of peer learning developed over the time that I conducted my research as my views of teaching and learning developed. Finally, I have briefly set out the findings of my PhD. In the next chapter, my literature review, I show how my research approach was based on a number of shortcomings of previous research into peer learning. I develop a criterion for researching peer learning that in Chapter Three, my research design, I relate to my research questions before describing the research methods I have used. The three research chapters follow this. Finally, I examine my conclusions for my research and demonstrate how my PhD has made a distinct and significant contribution to the understanding of peer learning.
CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

2.1.1 Summary of the Chapter’s Argument

The research into peer learning in post-compulsory education has shown it to be effective in supporting students’ learning. However, this research has been dominated by approaches based on the use of controlled experiments that attempt to isolate the outcomes of peer learning from the context in which they operate. This attempt to isolate the outcomes of peer learning has led to three problems. First, there has been a lack of focus on the implementation of peer learning schemes and the effect that this may have on the schemes that are evaluated. Second, whilst controlled experiments have provided data on the effects of different peer learning structures, there has been insufficient consideration of the actual operation of the peer learning schemes, the context in which peer learning operates, and the effect that this can have on the outcomes of peer learning schemes. Finally, there has been no consideration of the effect that peer learning can have on the conceptions of teaching and learning of the students involved. I argue that all of these factors need to be considered if a fuller understanding of peer learning is to be developed.

2.1.2 The Structure of the chapter

In this chapter I first re-emphasise the context of my research, as any review of the literature will be affected by the context in which it is being examined. I then define peer learning. Second, I briefly examine reviews of the existing literature on peer learning and demonstrate that it has been shown to be effective in promoting students’ learning. However, I show that the predominance of research based on controlled experiments has led to little consideration of context in which peer learning has been established. This has led to a number of gaps in the research on peer learning. Third, I show that there has been little consideration of the implementation of peer learning and this has led to peer learning structures being unstable within post-compulsory education. I suggest an alternative approach to
implementing and researching the implementation of peer learning. Fourth, I show the existing literature on peer learning fails to examine the actual operation of peer learning schemes and the effect that the context in which they operate can have on their outcomes. I suggest an alternative approach to researching individual peer learning schemes which places the outcomes of the scheme within the context of the way the scheme operated and the wider teaching and learning environment in which it is situated. Fifth, I show that research on peer learning has been based on a view of teaching and learning which separates the activities of teachers from the activities of learners. This has led to either an emphasis on the benefits of peer learning to the peer facilitators or to the students who are facilitated. I show that by using a view of teaching and learning which does not separate the roles of teachers and learners, it is possible to examine the benefits to both peer facilitators and the students facilitated. This approach emphasises that the two groups of students will benefit in different ways. It also highlights peer learning’s potential in challenging students’ conceptions of the role of teachers and learners. Finally, I conclude by establishing criteria for the researching of peer learning schemes that overcomes the three shortcomings in the existing research.

2.2 Setting Parameters

2.2.1 Context and Aims of the Literature Review

My research on peer learning takes place in the context of Further Education. As the peer learning co-ordinator, I am responsible for implementing peer learning schemes across the college. I had three aims in reviewing the literature on peer learning. First, I wanted to establish an approach to developing, implementing, and evaluating a college-wide peer learning strategy. Second, I wanted to evaluate the effectiveness of peer learning schemes within the contexts in which they operate and to understand the effect that this context can have on the operation and outcomes of peer learning schemes. Finally, I wanted to examine whether peer learning has any potential to challenge students’ understanding of the roles of teachers and learners.
The context of my literature review means that whilst the results of research on peer learning based on an experimental approach and employing control groups are useful, my own research is based on examining peer learning in naturalistic settings. As Griffiths et al (1995) point out there is a tension between these two approaches. Peer learning in a more naturalistic setting is more difficult to evaluate whilst the artificiality of strict controlled experiments makes the results very difficult to relate to practice.

The literature in this review will be based upon peer learning within Higher Education. This is because, whilst there are schemes that are run within Further Education, there is an absence of literature referring to them. Elliot (1996) and Young et al (1996) suggest that this is true of research generally in Further Education, and is due to undervaluing of research in Further Education by policy makers, managers, and practitioners alike.

2.2.2 Defining ‘peer learning’

In my research I will use the term ‘peer learning’ to refer to schemes where students support each other in educational settings. Other authors have used other terms such as ‘Peer Tutoring’ (Goodlad and Hirst 1989, Topping 1996), and ‘Peer Teaching’ (Goldschmid and Goldschmid 1976, Whitman 1988). I use the term ‘peer learning’ to emphasise the experience of both those leading, and those participating in the schemes. Peer learning is a generic term that includes all schemes that fall under the definition, whilst individual peer learning schemes and strategies can have different names. For example, the two peer learning strategies used in the college were called Supplemental Instruction and Peer Support.

There are two elements of peer learning, the ‘peer’ element and the ‘learning’ element. The ‘peer’ element is usually taken to mean ‘people from similar social groupings’ (Topping 1996), and, in the context of students, this is in terms of not being a professional teacher (Fitz-Gibbons 1990, Goodlad 1995, Griffiths et al 1995, Topping 1996). However, this is defined from the teachers’ point of view. This is
because the term ‘peer’ implies some element of common experience and it seems unlikely that all students share the same element of common experience. Equally, professional teachers can be students on a course, and they can be involved as learners in peer learning activities. Therefore, examining the term ‘peer’ from more of a student’s point of view, there are two elements that can put students in a ‘peer’ relationship. These are studying, or having recently studied, within the same institutional context or being engaged with the same learning material.

If students are studying, or have recently studied, at the same institution, then they will have a shared experience of what it is like to study at that place. They can help each other to adapt to that organisation. If students are studying, or have recently studied, the same learning material, then they will have a shared experience of what it is like to study that material and can assist each other in this. Peer facilitators need to have studied the same material, or within the same environment, not more than one year ago to still be considered the peers of the students they are supporting. This is for two reasons. First, institutions and syllabi change over time and so students can soon cease to have the common experience that peer learning is based upon. Second, people revise their understanding of past events in the light of current experience and, within a short time may lose a clear understanding of what it felt like to study that material or at that place. Thus my definition of ‘peer’ within the context of learners in educational settings, is students who are studying or who have recently studied the same material or at the same institution.

This definition of ‘peer’ means that final year ‘A’ level students are peers to other students in their own year, 1st year ‘A’ level students, 1st year degree students, and the other students studying at their institution. They are not peers in the same way, but they are peers in one of the two ways described above. Therefore, schemes where learners from different institutions and who have not studied the same material for several years assist each other are not defined as ‘peer’ learning schemes; for

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2 I use the term learning material throughout this chapter. It refers to the material to be learned as defined by the curriculum of the course the student is studying. This can be in terms of knowledge or
example, schemes in which undergraduate students go into local schools to assist pupils in their learning (for example, see Goodlad 1995). This is because they do not have the common experience that peer learning schemes rest on. For example, when a university student supports pupils in an inner city school, they do not interact as peers. Such schemes offer an example of more general community service rather than peers offering each other support.

**Peer learning** refers to students learning together. Usually it involves some students taking on a leadership role and facilitating the learning of other students. Peer learning is a generic term that refers to any form of formalised interaction involving peers supporting each other in a way that reflects the manner in which they are peers. Thus a 16 year old and a 70 year old student may not be peers in many ways, but they can, for example, be peers in terms of the subject they are studying and they can support each other in the learning involved in this. Whilst my definition of peer learning is broad, most of the schemes I will focus on in my research will be related to formalised interaction which involves peers giving support in terms of academic assistance.

Formalised interaction, in this context, means that the facilitative interaction is actually designed and intended occur, rather than being an unintended consequence of students working together. Unformalised interaction between students working together is excluded because otherwise all and any educational interactions between students could be defined as peer learning.

The final element in my definition of peer learning is that all students involved in peer learning can potentially benefit from the interaction. This is common in the literature on peer learning (for example see Griffiths et al 1995, Topping 1996) and is based on the notion that peer learning is an educational exchange in which the peer facilitators and the students facilitated learn together. They may not learn the same skills and does not imply the learning material is a physical entity.
thing, or benefit in the same way, but they should both gain educationally from working together.

Peer learning amongst students in educational settings is thus defined as:

*occurring in any formalised interaction where students are facilitated by other students who are studying, or who have recently studied, the same learning material or at the same institution, and where the support offered reflects the manner in which the students are peers and is mutually beneficial to the students who act as facilitators and the students who are facilitated.*

This definition assumes that peer learning involves two groups of students. Those who facilitate, and those who are facilitated. However, during a single interaction the same student, at different times, can both act as facilitator and be facilitated by another student. This definition of peer learning does not define the sort of facilitation that is involved in peer learning apart from the fact that it should reflect the way in which the students are peers and that both groups of students should benefit from the interaction in some way. The vagueness of this definition is deliberate as under this definition peer learning is characterised as a curriculum design tool that can be shaped, by the managers, teachers, and students involved in implementing it, to fit with the context in which it is to be used.

### 2.3 A Summary of Past Reviews of the Research into the Effectiveness of Peer Learning

Past reviews of the research on peer learning have reported that it has been successful in achieving a number of aims related to supporting students’ learning. However, there is a lack of certainty about this conclusion. Sometimes it is suggested that the processes of peer learning are not fully understood, at other times it is posited that research approaches used to investigate peer learning need to be improved. I argue that the tentative nature of these conclusions is due to the attempt to isolate the outcomes of peer learning from the operation of the schemes and the contexts in which they operate.
In reviews of peer learning (Goldschmid and Goldschmid 1976, Whitman 1988, Griffiths et al 1995, Topping 1996) five reasons are identified for using peer learning. It can result in improved educational performance for both the facilitators and the students who are facilitated. It can help to develop skills that students will require in the job market. It can reduce students’ social isolation and help to involve them in their educational institutions. It can be a cost-effective way of dealing with large numbers of students. Finally, it encourages students to become actively involved in their learning.

Peer learning has been found to be effective in achieving these aims in a number of different forms and a number of different contexts. In their reviews of the research on peer learning Goldschmid and Goldschmid (1976), Whitman (1988), and Topping (1996) found that different types of peer learning could be effective in supporting the learning of both the facilitated and facilitators involved in peer learning. However, the process of peer learning was still not clearly understood. For example, Whitman (1988) concluded that:

“Student peer groups are such a potent force in student development that, even if not always understood, the curriculum should be organised to make use of them”(p.60, emphasis added).

Topping (1996) found that there was evidence that certain forms of peer learning were effective but that the research on peer learning needed to be improved. He concluded

“However, peer tutoring is usually a relatively small component of a wide range of teaching and learning strategies deployed in higher education, so that the extent to which it is realistic to expect associated gains to be measurable, widespread, maintained and generalisable is debatable” (p.20).

These two quotations show this uncertainty about the outcomes of peer learning. This uncertainty is due to research involving control groups being seen as the ideal in research in peer learning (for example, see Topping 1996). Whilst controlled experiments have been useful in researching the effect of particular peer learning approaches, they have been less useful in approaching peer learning in naturalistic
settings. The use of controlled experiments is based on peer learning structures being established in a rigid manner so that the effects of these structures can be measured. This has led to little consideration of the effects of the way that peer learning is introduced into organisations. Also because controlled experiments are usually based on strict protocols for the interaction between the peer facilitators and the students facilitated, this has led to a situation where peer learning schemes are assumed to be unchanged when they are implemented. However, like most educational innovations, they are often constantly adapted to fit with the situation in which they have been implemented (Parlett and Hamilton 1972). Thus, there has been little examination of the actual interaction between students involved in peer learning as opposed to the interaction that is planned by the developer of the scheme. Equally, because controlled experiments seek to isolate the effects of peer learning from the situation in which they operate, there has been little consideration of the effect that the context has on the outcomes of peer learning schemes. Finally, the use of controlled experiments has been based on an understanding of teaching and learning which separates the roles of teachers and learners. This has led to contradictory evidence about whether it is the peer facilitators or the students who are facilitated who benefit from peer learning. It has also resulted in little examination of the potential of peer learning to change students’ conceptions of teaching and learning. In the rest of this chapter I examine these three shortcomings of the research into peer learning and develop an alternative approach to researching peer learning schemes.

2.4 The Implementation of a College-Wide Peer Learning Strategy

The predominance of research designs based on controlled experiments has led to a lack of consideration of the implementation of peer learning schemes within organisations. This lack of consideration of the implementation of peer learning schemes within organisations has led to peer learning schemes being unstable. This instability is due to two factors that can be related to controlled experiments being seen as an ideal to be aspired to when researching peer learning. First, the research approach that has been taken to examining peer learning has examined the interaction
of the students involved, but not the activities of the researcher-implementers of the schemes. This is because the two groups have been viewed differently. Second, the introduction of peer learning schemes has not been seen as an example of organisational change. This is because the researcher-implementers have set up and investigated a few individual peer learning schemes that they have been personally involve in, rather than attempting to implement peer learning across their institutions. In considering the implications of these two issues for the implementation of institutional wide peer learning the same conclusions are drawn. The way in which peer learning schemes are presented need to be carefully considered, and those affected by the introduction of peer learning need to be involved in shaping the innovation. This means that the form of the peer learning scheme will change as it is implemented. Using these conclusions I develop an alternative approach to the implementation of peer learning which can also be used to evaluate the effectiveness of the implementation of peer learning schemes across an institution.

2.4.1 The lack of stability of peer learning schemes

Peer learning structures can be traced back at least as far as the ancient Greeks (Topping 1996). However, particular forms of peer learning have come and gone. For example, Brown (1977) designed a scheme of student-to-student counselling in America. In 1955-56, 147 colleges used his version of student-to-student counselling, but in the latest reviews of peer learning schemes (Whitman 1989, Griffiths et al 1995, Topping 1996) it does not receive a mention. The lack of longevity of peer learning schemes, and educational innovations in general, is not a problem that has gone unrecognised. Ryan (1974) when reviewing a peer learning scheme called the Personal System of Instruction (PSI) wrote:

"The question of whether or not the personalised method of instruction will last beyond the novelty stage is an interesting one. The fate of educational innovations is generally not a happy one. They often begin hopefully, and show great promise in the hands of the founder and a few of his [sic] most enthusiastic followers. But often when the method spreads very far from the initial core of effective users it becomes rule bound and mechanical and unappealing. After suffering damaging criticism from other educators it fades from the scene." (p.22)
I argue that peer learning schemes lack stamina because the role of those who implement and research peer learning schemes has not been examined and because peer learning has not been recognised as an example of change within educational organisations.

2.4.2 Why has there been a lack of focus on the implementation of peer learning?

Those who implement peer learning schemes, especially in controlled experiments, are usually those who research them. This has led to a lack of consideration of the implementation of peer learning because the researcher and research subjects have been viewed in very different ways. The difference in the researchers' views of themselves and their view of those involved in their research has been brilliantly characterised by Kelly (1955):

"I, being a psychologist, and therefore a scientist, am performing this experiment in order to improve prediction and control of certain human phenomena; but my subject, being merely a human organism, is obviously propelled by inexorable drives welling up within him [sic], or else he is in gluttonous pursuit of sustenance and shelter." (p.4, emphasis in the original)

An alternative approach to researching peer learning views researcher-implementers and those involved in peer learning in the same way; this view sees both of these groups as self-directed agents. This has two implications for the way in which peer learning schemes are implemented and researched. First, it means that the views of those involved in peer learning need to be used to shape the schemes, and second, the effect of researcher-implementers on the scheme needs to be researched.

Those involved in research need to be seen as self-directing (Heron 1981). In this way, Kelly (1955) argued that people approach the world as 'personal scientists'. We use our constructs in order to make predictions to try to understand and control the world. We seek to improve our construct systems by testing them in terms of their predictive efficacy as we constantly try to make sense of our environment. (Kelly 1955). This view of persons has several implications for the way in which they are conceived when introducing and researching a new scheme such as peer learning. By
viewing people as personal scientists who seek to predict and control their world, it implies that their reaction to any new innovation needs to be seen as acceptable. Whether they choose to accept or reject an innovation will be based on their understanding of that innovation and its relevance to their practice. This implies that is it the responsibility of those who are introducing peer learning to students and staff to work with their understanding of the situation, rather than assuming that they are approaching schemes with a blank page. If students, teachers, or managers initially reject an approach to peer learning, it is part of the implementer’s responsibility to examine why this is. The implementer needs to investigate whether changes can be made to the approach to peer learning, or the way it is characterised, so that those involved in the change see it as relevant to their perceived needs. The more opportunity students, teachers, and managers have with working with an innovation, the more opportunity they will have to understand it. Thus it is essential to involve them in developing the approach to peer learning, so that they can shape it in a way that they understand.

Second, as a researcher-implementer of peer learning, I need to examine my understanding of peer learning schemes and their implementation. This self-study (see Butler 1996 for an example of a self-study) part of my work is about making my understanding of the implementation of peer learning, and ways of researching it, explicit. Without making my understanding of the implementation of peer learning explicit, my part, as implementer and researcher of peer learning, in shaping peer learning is hidden. This suggests that the process and outcomes of peer learning are dependent solely on the actions of teachers, students, and the institution, without considering the affect of my own practice on the development of peer learning. This requires a technical action research approach (Zuber-Skerritt 1996) which is focused on the development of peer learning structures. This work is carried out in co-operation with the other participants in the peer support process: the institution, the teachers, the peer facilitators, and the students who are facilitated.
In this way the research and implementation of peer learning is seen to be a co-operative activity involving all those that are affected by the schemes. This leads to a consideration of all of the participants' roles, the students', teachers', managers' and researcher-implementers' roles, in shaping the process and outcomes of the peer learning schemes.

2.4.3 Implementing peer learning as a form of organisational change

In viewing the introduction of peer learning as an example of organisational change several issues are raised. First, the importance of the way that peer learning is characterised to the organisation, second, the importance of involving those who are affected by the schemes in shaping them, and, finally, the importance of actively managing the institutionalisation of the schemes.

The implementation of peer learning, whatever form it takes represents an organisational change. An organisational change within this context, is a change in practice, whether that be the practice of teachers, students, or managers (Fullan 1991) There has been little consideration of implementation of peer learning schemes as an organisational change. However, if schemes are to last beyond the individual who first implements them, then it is essential to consider how peer learning fits within the organisation in which it has been introduced. This is true of any attempts at change within organisations (Lewin 1952, Fullan 1991, Elton 1998).

Often, peer learning is introduced into an organisation as the result of a successful funding bid. This was the case with the growth of Supplemental Instruction in the UK, which was heavily based on the money made available in the Enterprise in Higher Education Initiative (Rust and Wallace 1994). The large Peer Tutoring Initiative at the University at Ulster was based on money from a University Funding Council “Programme to Encourage Flexibility in Course Provision”(Griffiths et al 1995). These initiatives often disappear once the external funding comes to an end.
The lack of stamina in peer learning schemes is, in part, based on a failure to see them as an example of organisational change within educational settings. The reports from the literature simply suggest that the implementation of peer learning schemes is a matter of convincing those involved of its value by establishing a well structured pilot scheme. The approach that is promoted is to use this pilot scheme to convince others of the value of peer learning through the positive results that are achieved. (for example see Martin and Arendale 1993, Ainsworth et al 1994, Griffiths et al 1995, Donaldson and Topping 1996, Topping 1996). However once any innovation is put more widely into practice, it takes on a very different form than the initial well structured pilot scheme (Parlett and Hamilton 1972). This problem is exacerbated when one moves from implementing a single scheme of peer learning to a college-wide peer learning strategy. It then becomes even more important to examine the literature on managing change within educational settings. Fullan (1991) and Elton (1998) both provide excellent reviews of the literature in this field, whilst a closer look at the literature highlights some reasons for the continual disappearance of peer learning schemes.

The approach to implementing peer learning suggested in the literature represents the use of, what Chin and Benne (1970) called, an empirical-rational strategy. This strategy is based on the assumption that those involved in, and affected by, change will follow the rational choice once it is revealed to them by someone in the know. Elton and Cryer (1994) criticise strategies that seek to change sympathetic individuals and then expect them to change the institutions in which they work through rational debate and discussion. In seeking an alternative approach to the implementation of peer learning schemes it becomes clear that the nature of the process of organisational change can be seen as a learning process. Fullan (1991) argues that “Educational change is a learning experience for the adults involved” (p.66, emphasis in the original). It is no longer simply a case of rational discussion, but rather of involving people in the proposed change so that they can learn about it.
Schein (1972) in reviewing the work of Kurt Lewin identifies three stages of the change process; unfreezing, change and refreezing. This process has been summarised by Berg and Östergren (1977) "(T)he development of a change in its social setting, from the moment when preconditions for an innovation have emerged until the innovation in question has either become institutionalised or rejected." (Berg and Östergren 1977, p.14).

In the unfreezing stage the innovator seeks to create readiness for change within the current situation by creating the motivation for change. This should be done through the use of both encouragement and coercion; that is through the use of both carrot and stick (Elton 1998). The stick can come from the innovator finding cracks in the existing system, by identifying current conflicts which can give the potential for movement and legitimise innovation within the system (Berg and Östergren 1977). This can give the innovator backing from the top of the organisation, if they present their innovation as an answer to current problems. The carrot comes from understanding the concerns of those who will be affected by the change. This is essential because, as Rudduck (1991) argues, those involved in the change have invested in the existing system, and may use counter strategies to safeguard its continuation, unless they see that the change is somehow in their interest. For this reason Fullan (1993) writes, there is a need to "Understand the subjective world - the phenomenology - of the role incumbents as a necessary precondition for engaging in any change effort with them."(p131 - emphasis in original) and it is essential to create "conditions that enable and press people to consider personal and shared visions, and develop skills through practice over time" (p.23)

The second stage in the change process is that of change itself. If the change process is a learning process, this changes the way in which the implementation of the change is to be approached. Berg and Östergren (1977) argued that those involved in the change need to recreate the educational innovation for themselves. This idea has been brilliantly précised by Marris (1975):

"(T)he reformers have already assimilated the changes to their purposes, and worked out a reformulation which makes sense to them, perhaps through
months or years of analysis and debate. If they deny others the chance to do the same they treat them as puppets dangling by the threads of their own conceptions.” (p.160)

This means, as Schein (1972) argues, those who are involved in the change need to be involved in the planning process of the change. This means that the innovation will change as those involved will bring their individual ideas and experiences to the implementation of the innovation. For this reason, Berg and Östergren (1977) argue that it is only possible to give guidelines for the innovation process and likewise Fullan (1993) argues that change is a journey and not a blueprint:

“Productive educational change at its core is not the capacity to implement the latest policy, but rather the ability to survive the vicissitudes of planned and unplanned changes while growing and developing” (p.5).

It is important to involve even those who are initially hostile to the change, as to simply to use the voices of those in favour will increase the hostility of those against the change and lead to an impasse (Elton 1998). It is equally important to involve those who are not directly affected by the change but are in a position to encourage or block its development. During the change stage the emphasis should be on the carrot rather than the stick. Over use of coercive strategies at this stage may give the appearance of change, but can lead to so many counter-strategies by those opposed to the change that if any real, rather than merely rhetorical, change does occur it will not last for long.

Finally there is the refreezing stage, where the change is integrated into the institution. Schein argues that “The matter of integrating the cell must be actively managed and often this will take more effort than launching the experiment in the first place”(p.83). This emphasis on the institutionalisation of innovations is shared by most of the change theorists, as it is the most difficult part of the change process. However, it is the stage at which there is the least material on which to draw. This is probably because whether this situation is refrozen is dependent on largely external factors, and the extent to which the innovation fits in the organisation and the prevailing environment. The innovation may need to be changed and developed so
that the initial fit with the organisation is maintained. Finally, the length of time it takes for an innovation to take root needs to be recognised. Hörd (1987) argues that it takes several years for even the simplest innovation to be institutionalised.

2.4.4 A criterion for the implementation of peer learning schemes

The examination of the role of the researcher-implementer in developing peer learning schemes and the introduction of peer learning as an example of organisation change led me to develop a criterion for the implementation of peer learning schemes. This can be used to both guide the implementation of peer learning within an organisation and to research this implementation. The research would involve an examination of how the implementation of peer learning within a particular organisation related to the criterion. This research would offer insights into both the implementation of peer learning within that organisation and would give an insight into how the criterion should be developed within particular contexts.

The criterion follows Lewin’s (1952) three steps of change, with points 1. and 2. dealing with unfreezing, point 3. with changing, and point 4. with refreezing. The criterion is as follows:

1. Those who are seeking to implement peer learning schemes across an institution need to put them in the context of current conflicts in the system; that is they need to be presented as the answer to problems that have already been identified in the system. This will give the person leading the implementation support from those above. This can help to provide pressure with which to promote the implementation of peer learning. However, it needs to be recognised that if peer learning is presented as a potential solution to these conflicts, this will shape its aims and in turn the form of peer learning that is used.

2. Those affected by the introduction of peer learning need to be involved in its implementation, as do those who are not affected but are in a position to block or encourage the development of peer learning. These two groups do not only need to be consulted, but their ideas and experiences need to be used to change the approach to peer learning so that it fits with the environment in which it is to be
introduced. This provides those involved in the implementation of peer learning with incentives to participate in the individual peer learning schemes.

3. Those who are leading the implementation need to recognise that it will take time for peer learning schemes to be implemented and to work effectively. Those involved in the implementation need to have the confidence to make any changes that become necessary to increase the chances of the schemes achieving their objectives during the implementation. Any model of peer learning that is used is only a guide and it should not act as a bar to making individual peer learning schemes fit within the particular environment in which they are implemented.

4. Planning needs to begin early for the embedding of the peer learning schemes within the institution. If the peer learning schemes are not embedded in the institution, then they will be open to changes in priorities in that institution and may disappear when those involved in introducing them move on within, or leave, the institution. The approach to peer learning needs to be continually reviewed so that its fit within the organisation is maintained.

2.4.5 Conclusion to the implementation of a cross college peer learning strategy

I have shown that the predominance of approaches to researching peer learning based on controlled experiments has led to a lack of consideration of the implementation of peer learning schemes. This is due to the difference between the way that researcher-implementers are viewed and the way that those who are involved in peer learning schemes are viewed. It is also because the focus of the research is usually on a single or few peer learning schemes that the researcher was responsible for establishing. Thus there has been no need to consider the implementation of peer learning across an institution. However, in examining the implementation of peer learning across an institution several issues are raised. First, it raises the importance of the way that peer learning is presented to the institution. Second, it shows that those who are affected by the implementation of peer learning need to be involved in shaping the design of the schemes. Third it emphasises that the approach to peer learning may need to change when schemes are implemented so that they fit with the environment in which
they operate. Finally, the institutionalisation of peer learning within the organisation needs to be actively managed. The consideration of these issues led me to develop a criterion for the implementation of peer learning. This criterion can be used both as a guide to the implementation of peer learning across an institution and as a tool with which to evaluate the implementation of peer learning within an institution.

2.5 Researching Individual Peer Learning Schemes

Previous research studies into peer learning have used controlled experiments as an ideal to be aspired to when researching peer learning schemes. This approach attempts to separate peer learning from the context in which it operates, so that the outcomes of peer learning can be isolated and measured. This approach has led to a great deal of knowledge about the effect of different peer learning structures. However, it has also led to some elements of peer learning being unconsidered. There has been no consideration of the processes involved in peer learning and the how the outcomes of peer learning are affected by the processes of peer learning and the teaching and learning context in which they operate. I develop an alternative approach to researching individual schemes of peer learning that involves methodological triangulation. This allows a consideration of how the outcomes of the peer learning schemes are related to the processes of the scheme and the context in which it operates.

2.5.1 What has previous research shown about the structure of peer learning schemes?

The existing research shows that the structure of a peer learning scheme has an effect on its outcomes. The different elements that I present here can also be used to help others design their own peer learning schemes.

1. Designer and Aims

The scheme can be student designed, teacher designed, manager designed, external consultant designed, or use a pre-packaged design. All of these potential designers can of course work together but one of them is likely to do the bulk of the design work. Many writers (for example Fitz-Gibbon 1990, Goodlad 1995, and Griffiths et
al 1995) by insisting that peer learning schemes must be overseen by teaching professionals, imply there is the need for the input of a teaching expert in designing any scheme. However, this would seem to exclude the student self help groups that many students find supportive, from the range of peer support. All of the research on peer learning focuses on schemes that have been designed by teachers, external consultants or pre-packaged designed. There is no evidence to suggest that one type of designer produces more successful schemes than another.

The scheme can have many different types of aims. For example, it can be designed to improve student performance, reduce attrition rates, increase student integration into the institution or into their course. Students, teaching staff, or the institution can set these. Of course any one scheme can try to meet more than one aim, but there will tend to be one primary aim, on the meeting of which the future continuation of the scheme will rest. Often this is the aim of the funding body that is financing the peer learning scheme. As I showed in Section 2.2, peer learning has been found to effective in achieving a number of aims.

2. Frequency and location of peer learning in relation to the curriculum

Peer learning can either carry on through a term or year, or be set up for a particular occasions such as induction (Saunders 1992). There is some evidence that peer learning is more effective when the interventions are occasional and of a short duration (Cohen et al 1982).

Peer learning has been found to effective in supporting students when it takes place both within and outside the existing curriculum. SI takes place outside of the curriculum, with students being offered support sessions to which their attendance is voluntary (Blanc et al 1983). Proctoring by final year students of the project of first or second year students is an example of support within the curriculum (see Saunders 1992 and Button et al 1990 for descriptions of this type of scheme). Another example of peer learning within the curriculum is the situation where each member of the class is given responsibility for preparing a part of the curriculum and delivering it to the rest of their class (Griffiths et al 1995).
The location of peer learning in relationship to the curriculum is often the defining factor in whether peer learning is compulsory or voluntary. Peer learning as part of the curriculum is generally compulsory, whilst peer learning outside the curriculum is usually voluntary. However, it can alter over time, with the first few meetings being compulsory and then those supported being allowed to decide whether they wish to continue. A voluntary scheme can also become more compulsory with the students who are being targeted with support having the choice of whether they contract into the scheme and those who contract in being expected to attend. There has been no examination into research on peer learning of the effect of attendance at peer learning being voluntary or compulsory.

3. Focus of sessions

Schemes can be primarily to enable students to gain an understanding of their course material, as is the case with PSI (Keller and Sherman 1974), to help them to develop the learning skills for their course, as in SI (Blanc et al 1983), or to enable them to adapt into a new teaching and learning environment as is the case with 'parrianage' (see Goldschmid and Goldschmid 1976 and Goldschmid 1988). They can try to do all three of these as is the case in Kitchen and Frame's (1990) conception of mentoring. Some argue, Cohen et al (1982), that peer learning is best at supporting the development of lower level skills, but this may simply be because this is easier to measure than the higher level skills, understanding, and emotional support, that some peer learning schemes seek to develop. There is also evidence that the more complex the subject matter, the more likely it is that the more able students, rather than the less able, will benefit from the peer learning scheme (Kulik et al 1976).

The majority of peer learning is designed to support a single course, module, or unit. However, an example of peer learning across courses is where peer facilitators operate out of a central unit offering support to students who request it. For example, at Wellington Polytechnic individual or groups of students can request an appointment with a Peer Tutor through their Learning Support Centre (Wellington Polytechnic, undated). The outcomes of these schemes are very difficult to evaluate
as they involve students from very different courses and the results on their effectiveness are not conclusive (Topping 1996).

4. Relation of peer facilitators to peer learners

Facilitators can be on the same or different courses than the students they support. Which is appropriate will depend on the type of scheme involved. For example, when supporting other students in completing portfolios it is important that the peer facilitators have completed a similar portfolio to those they are supporting. However, in a scheme to integrate students with severe learning difficulties into the wider college, it is essential that their supporters come from courses outside of this area but within the college. In some schemes the peer facilitators could be from different institutions from those they support, providing they have recently studied in the same institution, or the same material, as those they are supporting. There has been no examination in the research on peer learning about how the closeness of the peer relationship between the peer facilitators and students who are facilitated affects the outcomes of peer learning.

If peer learning is provided by those on the same course, facilitators can either be in the same year, or from different years to the students they facilitate. (Topping 1995, Goldschmid and Goldschmid 1976). Same year peer learning is often used to directly teach students new course material. This is either done through learning dyads, or students from a course group taking it in turns to lead on particular topics (see Griffiths et al 1995). There is evidence that students who are at an earlier stage of their academic career in an institution value peer facilitators more than those who have been at the institution for a while. Those who have been at an institution for a few years appear to value the subject expertise of their teachers more highly than that of their peers (Schmidt et al 1995).

Peer learning can either be 1:1, as in learning dyads and mentoring, a few supportees to one supporter as in ‘parrianage’, or 1 or 2 supporters to many supportees as in SI (Topping 1995). Again which is preferable is dependent on the aims of the scheme. Some suggest that 1:1 tutoring is more effective in promoting students’ acquisition of
material (Cohen et al 1982, Kulik et al 1976), but if, for example, the aim of the scheme is to promote group work then this would clearly not be the most appropriate form of peer learning. Also, there is evidence that small groups are the most effective way of promoting students learning, and that working in small groups teaches them essential skills for the completion of their courses (Light 1990). However, there is also evidence that more sociable students do better in peer learning in groups than less sociable students (Beach 1960).

5. The roles of the peer facilitator and the students who are facilitated

Peer facilitators can have many roles. For example, the facilitators role can be to teach new content, as in surrogate teaching, (Griffiths et al 1995), to assist assimilation of existing material, as is the case with SI (Wilcox and Koehler 1996), to stimulate group discussion in problem based learning (Moust et al 1989), to assess students understanding of the course material, as in the Personal System of Instruction (PSI) (Kulik et al 1976), or to counsel the other student, as is the case with ‘parsonianage’(Goldschmid 1988). Peer facilitators in all of these roles have been found to be effective in supporting students.

Those who offer and receive support can either have these roles throughout the time of support, as is the case in SI, or they can periodically swap roles (Goldschmid and Goldschmid 1976). An example of the latter is the case of learning dyads (Goldschmid and Goldschmid 1976), and Reciprocal Peer Tutoring (RPT) (Fantuzzo et al 1989), where two students take it in turns to ask and answer questions. These are often used to teach very specific parts of the curriculum and usually are part of highly structured schemes. RPT has been found to be very effective in promoting learning and reducing students’ levels of anxiety whilst learning.

The interaction between facilitators and facilitated can be structured in two ways. First, interaction can be structured in terms of who supports who, by peer facilitators being ‘matched’ with the particular students they are to facilitate rather, for example, than the students who are facilitated selecting their facilitator. Second, the actual interaction between the peer facilitators and those they support can either be highly
structured or left to the discretion of the peer facilitators. Kulik et al (1976), Topping et al (1996) and Topping et al (1997) argue that more structured interaction in peer learning is more effective. However, the better results claimed for schemes where interaction is structured may be due to the fact that the outcomes are easier to operationalise and therefore to measure.

6. Training and reward of peer facilitators

Most reviews of peer learning (Topping 1996, Griffiths et al 1995) emphasise the importance of training and on-going support for the peer facilitators. These are considered vital to maintain the quality of the scheme. Evidence to support this has been offered by Fuchs et al (1994). This can be by course teaching staff, other support staff as in SI, or more senior students than the supporters and can be provided in a variety of forms. Topping et al (1997) uses an initial 2 hour briefing with the peer facilitators, whilst SI leaders receive 2 days initial interactive training and ongoing support over the period that they run sessions (Center for Supplemental Instruction 1998). Which is most appropriate depends on the scheme involved, and needs to be balanced with the other commitments of those involved. There has been no investigation of the effect of different types of training for peer facilitators on the outcomes of peer learning.

Facilitators can be rewarded financially or through academic credit. Some do not regard that the facilitators require reward. For example, at the University of Bangor it was felt that no extrinsic motivation should be offered to the peer facilitator as this would be likely to lessen their intrinsic motivation (Linford 1996). However, Linford found that the experience of being involved in peer learning without reward did not increase the peer facilitators’ levels of intrinsic motivation.

Some students can only be peer facilitators if they are paid because of the costs involved, for example the opportunity cost of forgoing alternative paid employment. Students being peer facilitators for academic credit has the disadvantage that someone who is very uncomfortable in the role of peer supporter may continue because of the perceived threat of otherwise failing the unit. Which of the four options is the most
appropriate will clearly depend on the context in which peer support is introduced. For example, where peer support roles are reciprocal it could be argued that no external reward is needed as all students benefit from offering support and being supported. There is no evidence on whether peer facilitators are more or less effective when they are paid or they receive academic credit.

2.5.2 The limitations of traditional approaches to researching peer learning schemes in naturalistic settings

When schemes have been implemented in naturalistic settings there has been a tension between research strategies that seek to use a quasi-experimental approach and strategies which use more of a qualitative approach. A quasi-experimental approach attempts to get as close as possible to the ideal of controlled experiments to produce generalisable results. In contrast, qualitative approaches have attempted to produce an account of a particular example of a peer learning scheme. I use the research on Supplemental Instruction (SI) to illustrate this tension. The research on SI was selected for two reasons. First, it is one of the most widespread forms of peer learning with nearly 1000 higher educational institutions world-wide having used the programme (Center for Supplemental Instruction 1998). Second, it was the starting point for the case study of two peer learning schemes that I present in Chapter Four. I conclude that methodological triangulation (Cohen and Manion 1994) offers a different way of researching peer learning which reduces the tension between these two approaches.

1. The tension between quasi-experimental and qualitative approaches to researching peer learning

SI, or Supplemental Instruction, is a scheme where peer facilitators run group sessions for peer learners. It is described in Section 4.5.1. The research into SI is largely based on a quasi-experimental approach. The US evidence suggests that SI users gain higher mean grades than non-users (Lundeberg 1990, Bridgham and Scarborough 1992, Congos and Schoeps 1993, Kenney and Kallison 1994). This is found even when previous academic achievement and ethnicity (Center for Supplemental Instruction 1998), affective factors (Visor et al 1992, Visor et al 1995),

However there are several gaps in the research on SI that are caused by the quasi-experimental approach. First, in the research the structure of the actual sessions that are run and the nature of interaction between the SI leaders (peer facilitators) and SI users (peer facilitated) are rarely considered. Second, the SI leaders and SI users understanding of each other’s roles and the training that the SI leaders receive are not considered as factors both in the operation and outcomes of the schemes. Finally, the way in which the structure of the course, and its assessments procedure, affect SI schemes have not been considered. All of these factors are important if a greater understanding of the way in which peer learning operates is to be developed.

Some studies, employing more qualitative approaches, have considered these issues. Lundeburg and Moch (1995) considered the interaction between SI leaders and SI users. There have also been several qualitative studies into how SI operates in particular subject areas (McMillin 1993, Burmeister et al 1994, Zerger 1994). However, these do not relate their findings to the outcomes of SI. This means there is no consideration of how these factors effect the outcomes of SI, and whether particular approaches to running SI are better than others. This gap in the research is surprising since the positive outcomes achieved through the use of SI are claimed to be based on the “special environment an SI leader creates within the SI session” (Center for Supplemental Instruction 1998, p. 23).

2. An alternative approach to researching peer learning schemes

An alternative approach to researching peer learning schemes, such as SI, is to use a form of ‘methodological triangulation’. Methodological triangulation involves using a number of different methods of collecting data to build up a fuller picture of the
phenomena under consideration. Cohen and Manion (1994) describe methodological triangulation in the following way:

“(T)riangular techniques in the social sciences attempt to map out, or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint and, in so doing, by making use of both quantitative and qualitative data” (p.233).

Adelman et al (1980), quoted in Cohen and Manion, argue this is particularly useful when conducting case studies:

“The advantages of a particular technique for collecting witnesses’ accounts of an event - triangulation - should be stressed. This is at the heart of the intention of the case study worker to respond to the multiplicity of perspectives present in a social situation.” (p.241).

A case study of peer learning, involving methodological triangulation, would look at the accounts of both peer facilitators and those who are facilitated. Their accounts of the nature of their interaction, and their understanding of each other’s roles are an essential part of understanding the workings of peer learning schemes. Equally important are an understanding of the impact of the training and support that is offered to peer facilitators, the types of students who use peer learning, and the structure of the course, and the methods of assessment, studied by the students who are facilitated. These can all be related to the outcomes of the scheme. In this way a full picture of the way peer learning operates in the particular context in which it is being investigated is to be developed.

2.5.3 Conclusion to researching individual peer learning schemes

I have shown that the existing research on peer learning has been effective in establishing the effect of different structures of peer learning. However, the quasi-experimental approach that has predominated when investigating peer learning schemes in their natural settings has led to a number of shortcomings in the research. The actual structure of the sessions and the type of interaction between the peer learners, as opposed to the researchers’ initial plan how the sessions would run and the students interact, have rarely been considered. The students’ understanding of each other’s roles and the effects of different types of training for peer facilitators
have not been considered. Finally, the effects of the course structure and the methods used to assess the students who are facilitated on the processes and outcomes of the schemes have not been considered. I have shown that methodological triangulation can be used to overcome these shortcomings. Methodological triangulation involves using both qualitative and quantitative data from different sources to build up an overall picture of the operation and outcomes of a peer learning scheme. This can be used to develop an account of how those involved experienced peer learning, to investigate which students use peer learning, to examine the structure of the courses on which peer learning operates, and to relate these factors to each other and to the outcomes of the peer learning scheme.

2.6 The Wider Significance of Peer Learning for Teaching and Learning

The way in which teaching and learning interactions are understood has an impact on the way that peer learning is understood. In particular it has an effect on the way that the role of the peer facilitator and the benefits of peer learning are conceptualised. I show that traditional notions of teaching and learning separate the activities of teachers and learners. This has led to the role of peer facilitators being viewed either as a predominately teaching role, in which they are thought to benefit most from the interaction, or as a predominately learning role, in which the focus is on the benefits to the students who are facilitated. However, I show that if teaching and learning are seen as part of a single process then the role of peer facilitators can be seen as challenging the traditional separation of teaching and learning. This because the role of the peer facilitators, who learn as they teach, involves elements of the traditional role of teachers and elements of the traditional role of learners. This approach to peer learning also emphasises that both the peer facilitators and the students who are facilitated benefit from the interaction, but in different ways. The peer facilitators gain from an increase understanding of the course material whilst their involvement in peer learning can challenge their conceptions of the roles of teachers and of learners. The students who are facilitated can gain from an increased understanding of the course material and an increased insight into how to approach the course they are
studying. The examination of these benefits re-emphasises the importance of examining how peer learning affects all the students' involved conceptions of teaching and learning. Equally, these conceptions need to be placed within the context of the course that is being studied and the institution in which it is being studied. This is because any changes in approaches to teaching and learning encouraged by involvement in peer learning will be affected by the demands of the course and the institutional approach to teaching and learning.

2.6.1 The traditional notion of the division between the roles of teachers and learners

Traditional notions of the roles of teachers and learners can be identified in the research on students' and teachers' approaches to teaching and learning. Whilst the research has characterised students' approaches to learning and teachers' approaches to teaching in very similar ways, teaching and learning are almost always considered separately. The view underlying this research appears to be that teachers and learners are engaged in very separate activities. Learning is seen as an individual activity in which students seek to acquire knowledge, whilst teachers are responsible for organising the subject matter and preparing the group of learners to be assessed. This division leads to approaches to peer learning which either emphasise the role of peer facilitators as that of a teacher or that of a learner. If the role of peer facilitator is characterised as teaching, then it is the benefits of peer learning that are thought to be mainly to the peer facilitator. If the role of peer facilitator is characterised as engaging with the students who are facilitated in learning then it is the benefits to the students who are facilitated that are highlighted in the research.

1. The traditional notion of students' and teachers' approaches to teaching and learning in research

Research into students' understanding of the nature of learning, following Marton and Saljö (1976), divides students learning into two qualitatively different types of learning. Deep learning which is focused on the meaning of what is to be learned and surface learning which is focused on reproducing what is to be learned. These two types of learning have been found in a variety of studies from a variety of research

Teachers’ understanding of teaching are also divided into two qualitatively different types. Some teachers view teaching as the facilitation of learning. This approach to teaching has been shown to encourage deep approach to learning from students. Other teachers view teaching as the transfer of knowledge which, the evidence suggests, encourages students to adopt surface approaches to learning (Fox 1983, Pratt 1992, Gow and Kember 1993, Murray and McDonald 1997, Prosser and Trigwell 1997).

In this research, the researchers have used a view of teaching and learning which has separated the roles and activities of teachers and learners in a misleading way. Hounsell (1997) argues that research into teaching and learning has developed from simply considering teaching to a point where there is now a consideration of both teaching and learning. However, he concludes that it is still “common place to consider lectures and teaching in isolation from students and learning” (p.257). This separation of teaching from learning, and learners from teachers is ubiquitous in research on teaching and learning. For example, Marton et al (1993) focus on what students meant by 'learning', in isolation from what they understood 'teaching' to mean. They also do not examine teachers’ conceptions of teaching and learning. Fox (1983) looks at teachers’ theories of teaching, in isolation from students’. Franz et al (1996) examine both students’ and lecturers’ conceptions of learning in a variety of subject areas, without examining this in relation to their conceptions of teaching. Ryder (1987) asked students to describe lecturers and lecturers to describe students, without examining how they viewed their own roles in relation to the 'other'.

2. The roles of teachers and learners based on the traditional division between teaching and learning

Under this view of teaching and learning, the role of teachers and learners are considered to be very separate. I examine the division between the roles of teachers and learners in phenomographical research, as this research has been at the centre of
investigating approaches to teaching and learning. Booth (1997) set out principles of teaching based on a phenomographical view of learning. Under these principles it is the teachers’ responsibility to be aware of learners’ initial understanding of the subject matter and to identify the concepts that are critical for students to grasp in order to be able to understand the subject matter. Teachers should also ensure that learners reveal and discuss their conceptions of the subject matter, and make the learning material relevant to the learners. The learner's role is not made explicit but, as the following quotation shows, it seems to be simply to engage in this process in an appropriate way i.e. by using a deep approach into their studies. The pejorative characterisation of surface learners, compared to deep learners, implies that they are failing in their responsibility of learners to engage with their studies:

"Deep approaches are indicated by students who take these opportunities to develop awareness in such ways. It demands an openness to variation, a willingness to tussle with the resulting perspectives, a point of reference in personal experience, and a clarity to maintain focus on the object of thought. Surface approaches to tasks are indicated when students neglect to see the object of their thought from different angles or are unwilling or unable to cope with the tangle of ideas that arise, or who fail to relate tasks to their own experience, or who fail to keep the object of thought in focus" (Booth 1997 p.147, emphasis added).

However, this view of the teacher's role as the organiser of learning activities and materials for students, and the students' role as engagers with these activities and materials, presents a very narrow view of students' learning. It suggests that teachers are solely responsible for the teaching and learning interaction, whilst students are simply responsible for their own learning. This issue was highlighted in a study by Boulton-Lewis et al (1996). They found that teachers are no more independent, or self motivated, in the student's role than other people. This is surprising when it is considered that in their teaching role teachers attempt to engage students in the learning process and produce independent learners. However, if, as I have argued, there is a division between roles of teachers and learners, and the active role of the teacher in some way causes the passive role of the student then this finding becomes more comprehensible. If, when teachers act as students, they have similar expectations of their teachers as their own students have of them, then they will take
on a similar passive role as their own students. Thus, one of the causes of students' passivity in learning is teachers' and learners' tacit understanding division of the responsibility for teaching and learning interactions.

3. The role of peer facilitators and benefits of peer learning based on the traditional division between teaching and learning

Peer learning based on the traditional division of learning either emphasises the role of peer facilitator as a teacher-organiser or as an engaged-learner. When the role of peer facilitators as teacher-organisers is emphasised, the research finds that it is the peer facilitators who benefit from peer learning. However, when it is the peer facilitators are viewed as engaged-learners, then it is the benefits to the students who are facilitated that are stressed.

The research on peer facilitators as teacher-organisers has shown that they benefit from this process more than the students they teach. (Annis 1983, Bargh and Schul 1980, Falchikov 1990). Gartner (1994) argued that, because the peer facilitators gain so much more than the student they teach do, all students should have an opportunity to be in the teaching role. Even in Reciprocal Peer Tutoring (Fantuzzo al 1989) it is the preparation for teaching and the teaching, that the peer facilitators engage in, and the extra responsibility they take on, that is shown to benefit the students not the tutoring they receive from their fellow student. This suggests that when the role of peer facilitators is characterised as a teacher organiser it is the peer facilitators who benefit from peer learning.

The research into Supplemental Instruction, SI, emphasises the fact that SI leaders do not teach. They are rather characterised as engaged learners. For example, it is firmly pointed out that:

"The SI leader is a facilitator, not a mini-professor... The SI leader is a "model" student who shows how successful students think about the course content. Collaborative learning is an important strategy since it helps students to empower themselves. (Center for Supplemental Instruction 1998, p.3)."
This issue was considered so important that a section of the Kingston University H.E.F.C.E report on SI was dedicated to SI practitioners showing that SI was not teaching (Kingston University 1994) and this is the only section of the report that is available on the Center for Supplemental Instruction website. As I showed in Section 2.5.2, SI has been successful in improving the learning of the students who are facilitated. To date there has only been qualitative investigation of the benefits to the SI leaders, and this is usually confined to a questionnaire to the SI leaders. Thus when the role of the peer facilitator is seen as that of an engaged learner it appears that it is the students who are facilitated who benefit from peer learning.

I have shown that the traditional division between teaching and learning has two consequences for peer learning. First, it has led to the peer facilitators’ role being characterised into very different ways; either it is characterised as teacher-organiser or it is characterised as an engaged learner. When it is characterised in the first way it is the peer facilitators who seem to gain most from peer learning, when it is characterised in the second way the research has shown the benefits to the students who are facilitated. However, this emphasis on the teaching or learning in the role of peer facilitators, has obscured the radical element of their role. This is that peer facilitators are involved in teaching and learning at the same time. For this to be properly understood teaching and learning needs to be viewed as a continuum.

2.6.2 Teaching and learning as a continuum

When teaching and learning is viewed as a continuum there is no set separation of the roles for teachers and learners. Rather, teachers and learners can take on responsibility for different elements of the teaching and learning situation. This allows peer facilitators to be considered as both teachers and learners. This in turn leads to the consideration of the benefits of peer learning to both the peer facilitators and the students who are facilitated. I show that whilst both of these groups benefit they are likely to benefit in different ways. These benefits highlight the way in which peer learning can challenge students’ conceptions of teaching and learning. However,
benefits to both groups of students need to be related to both the context of the course that the students are studying and the institution in which the students are studying.

1. The role of teachers and learners when teaching and learning is seen as a continuum.

When teaching and learning is conceived as a continuum then the roles of teachers and learners both involve teaching and learning. Hounsell (1997) hints at such an approach when he argues for an experiential conception of teaching and learning. Under this conception:

“The teaching and learning process can thus be seen not as a matter of transmission, but rather as a meeting of minds where world views confront and collide with each other” (p.241).

This alternative view of teaching and learning sees the two activities as inseparable.

For example French and Bazalgette (1994) argued that:

“Despite the apparently obvious distinction, so powerfully supported by cultural expectations, between 'teach' and 'learn', it is possible that at the moment of change only one thing is happening. Or as with quantum phenomena, are two things occurring at once, that cannot be considered separately without distorting our understanding of the event and indeed affecting the event itself, by the way in which it is perceived? . . . We have come to believe that in the instant when learning occurring occurs, the actual experience of teaching and learning are inseparable, because they are totally dependent on each other: in that instant, the 'teacher' also learns and the 'learner' teaches (p. 10, emphasis in the original).

French and Bazalgette’s view of teaching as the other side of learning (p. 3), fits with Lave and Wenger’s (1991) theory of learning as legitimate peripheral participation. This illuminates an alternative way of approaching the teaching and learning process that does not separate the roles of the teacher and the learner. For Lave and Wenger learning involves becoming increasing involved in the practice of an expert, as is the case in apprenticeship. They argue that

“The apprentice’s ability to understand the master’s performance depends not on their possessing the same representations of it, but rather on their engaging in the performance in congruent ways. Similarly, the master’s effectiveness at producing learning is not dependent on her ability to inculcate the student with her own conceptual representations. Rather, it depends on her ability to manage effectively a division of participation that provides for growth on the part of the student.”(p.21)
In this way teaching and learning are viewed as parts of the same process, with learners becoming increasingly involved in the practice of the teacher. The teacher is not involved in a separate activity to the learner, but rather manages 'the division of participation' between teacher and learner within a single activity. This division is continually shifting as the learner gradually takes an increasing responsibility for this process. Teachers make a decision of how much responsibility the learner takes on based on their experience of dealing with the material that is being studied. It may be that they have the same level of responsibility as in the traditional approaches to teaching and learning. However, there are two key differences. First, this will have been an active decision on the part of the teacher to divide up the roles in this way, rather than being based on her tacit assumptions. Second, the teacher's aim will be to gradually increase the students' part in the teaching and learning process as they become more experienced, rather than leaving their role unchanged over time.

It is worth noting that approaches that are more social in their approach to teaching and learning tend play down the separation of the roles of teachers and learners. For example, in Vygotsky's definition of the Zone of Proximal Development, the difference between what students could do on their own and what they could do with assistance, included that this assistance could come from “adult guidance or in collaboration with other peers” (Vygotsky 1978 p.86).

2. The roles of teachers and learners based on the view of teaching and learning as a continuum

There are plenty of examples of where the responsibility for aspects of the teaching and learning process has been given to students. Heron (1989) shows how any of the seven dimensions (the group, planning, meaning, confronting, feeling, structuring and valuing dimensions) of experiential learning activity can be the responsibility of the teacher, the students or their joint responsibility. In education, the examples suggest that the higher the level of the course the more responsibility students have been given for the teaching and learning process.

56
At an undergraduate level, Abercrombie (1960) gave students the opportunity to discuss and develop their conceptions of anatomy in free group discussions. Her role as teacher was to stimulate the discussion amongst students rather than to teach them the subject matter. She found within this process that student would take on different roles in the group and that these roles were interchangeable. She found that “At any one student can be at one moment the teacher, at another the pupil” (p.75).

Eraut et al (1975) found that in designing a self-instruction pack the course team gained more from the process than the students did. They changed the course so that the students could have a role in formulating problems, clarifying assumptions, and choosing the analytical techniques. This allowed the students to construct their own view of the learning material rather than basing it on the lecturers conceptions.

In professional education, Rowland (1993) used an interpretative model of teaching and learning to set up a course in which tutors and learners were accorded equal status. The tutor and learner were mutually critical of each other within a mutually supportive context. The students took on teaching role in the group and could negotiate the area for investigation that would be the focus of the course. The tutor’s initial role was to help the group reflect on and identify its concerns. However, after this the students delegated the roles they wished the teacher take up. Finally, in her presidential address to the British Educational Research Association (BERA) Pam Lomax (1998) spoke of her wish for a reciprocal relationship with BERA’s members in which :“each side is willing to teach and to learn, as opposed to a relationship in which one side teaches and the other always learns” (p.19).

Despite the fact that these examples show learners being given more experience the further they progress in their education, there is no reason why students cannot take on more responsibility for their courses earlier on in their academic careers. Peer learning offers one way of doing this by offering students the opportunity to support less experienced students in their learning.
3. The role of the peer facilitator based on teaching and learning as a continuum

Under this view of teaching and learning, the role of the peer facilitator can be seen to offer an opportunity for students to participate increasingly with their teachers in the teaching and learning environment. In this model teachers are expert learners of their subjects, who structure interactions and confer legitimacy on the activities of their apprentice learners. These apprentice learners “gradually assemble an idea of what constitutes the practice of the community” (Lave and Wenger 1991, p.95). As the former apprentices become fuller participants in the community of practice, they take a greater part in the teaching-learning process. They move from the role of novice learner, and can take on the role of peer facilitator, in which they have some responsibility for the learning of others, as well as for their own learning. This model is reminiscent of the experiments of Lancaster and Bell, two of the early pioneers of peer learning in schools. In coping with a situation of huge classes, they used more advanced pupils as tutors to younger children. Many of these more advanced pupils went on to become full teachers (see Goodlad and Hirst 1989).

This view of peer learning suggests that peer facilitators and the students facilitated will benefit in different ways from their involvement in peer learning. It also highlights the need to consider whether involvement in peer learning can affect peer facilitators or the students facilitated understanding of the roles of teachers and learners.

4. The benefits of peer learning for peer facilitators

The peer facilitators will benefit from peer learning in two ways. First, they gain an increased understanding of the material they are studying. Second, it gives them greater responsibility in the teaching and learning process. With this greater responsibility, peer facilitators may have their views of the roles of teachers and learners challenged. They may come to see the role of learners as more active as they become more involved in the teaching and learning process.

Peer learning represents a new role for the students who are peer facilitators. They take on a role that is somewhere between that of teacher and learner. It is their
responsibility to lead\(^3\) the peer learning sessions, whatever their form, and they have some responsibility for promoting the learning of the students they support. They usually facilitate discussions amongst students about particular areas of the curriculum. In this way peer facilitators participation in their educational institution can be increased. They can apply what they have learnt to support others thus giving the opportunity to participate in the development of learning within the institution. As I showed earlier, research into peer learning suggests that giving students the role of a peer supporter is effective in promoting their learning (Annis 1983, Bargh and Schul 1980). The reason given for this is that acting as peer facilitators increases their involvement in the material they are learning, and helps them to link it to other areas of their knowledge, as they attempt to restructure the material so that they are able to explain it to another student. However, Kennedy (1990) found, in her research into peer learning involving school children, that learning by teaching and preparation of material on their own did not lead to improved results for the students involved. However when teaching and learning are viewed as a continuum, other benefits of acting as a peer facilitator become apparent.

Peer learning involves a new relationship between course teachers and the peer facilitators. The peer facilitator often has a responsibility of feeding back how they think the supported students are progressing in the area supported, and can act as a link between them and the course teachers. This puts the peer facilitators in a relation with their teachers which is different from that of simply teacher and learner, as the peer facilitator has a responsibility for representing the views of other students to the course teachers and for commenting on their progress. The role of peer facilitator also involves a new relationship between the peer facilitator and their educational institution. In meeting with, and supporting, other students the peer facilitator becomes a representative for their course and the institution as a whole. This means that the peer facilitator has additional responsibility to that traditionally associated with the role of a student. These elements of their role may lead peer facilitators to

\(^3\) The term 'lead' is deliberately ambiguous. Peer facilitators have different roles in different schemes.
take a more active view of their role as learners as it gives them the opportunity to have more responsibility in the structuring of their course.

All of these factors place peer facilitators in a role somewhat between that of teacher and learner, thus helping to improve their learning. This can challenge the assumptions that underlie traditionally static nature of these roles, and emphasise the symbiotic and interactive relationship between teaching and learning.

5. Benefits of peer learning for the students who are facilitated

The students who are facilitated will get two benefits from peer learning. First, they will gain an increased understanding of the material they are studying. Second, if the peer facilitators have studied the same course as they are supporting, the students facilitated will gain a greater insight into the course they are studying.

Peer learning offers a new type of relationship for the students supported, that is their relationship with the peer facilitators. It is a different type of relationship between that of student and student, and that of student and teacher. Peer facilitators are usually in a role that slightly separates them from those they support. They are usually a stage on, either in terms of progressing through the institution, or because they have done some additional preparation in relation to the material being studied. However, the peer facilitators are closer in experience to the students they support than teachers. This means that they can more readily understand the problems students face. As Whitman (1988) writes, they are often ‘consciously competent’ in the areas they support, they remember how they became competent (even if they are in the same year as those they support, they will have prepared the material beforehand). This is as opposed to teachers who are ‘unconsciously competent’, that is they are no longer aware of how they became competent, they can just do it. As the peer facilitators are closer in educational experience to those they support, it is easier for those who are supported to see the peer facilitators as role models and to imagine themselves taking the lead demonstrated by peer facilitators. Thus they may well be more willing to challenge the peer facilitators than their teachers, thereby increasing the levels of interaction and giving the students the opportunity to argue and dispute the material.
under discussion rather than passively accepting it. This gives them the opportunity of talking the talk with their peers, rather than being talked at by their teachers. Support for this is offered by Moust and Schmidt (1995) and Schmidt et al (1995) who, when they compared the performance of students and teaching staff in supporting students, found that whilst the teaching staff had greater subject expertise, the students were better at understanding the nature of the students problems in mastering the subject matter and displayed more extensive supportive behaviour.

The students who are facilitated will not have their views of teaching and learning challenged in the same way as the peer facilitators. The changes in their views of teaching and learning will depend on several factors. First, it will depend on the way that the peer facilitator structures the sessions and whether this encourages them to become more involved with the learning material and take some responsibility within the sessions. Second, it will depend on the structure of the course they are studying. The peer facilitator will seek to help them to survive their course and so will encourage them to adopt an approach to teaching and learning that they have found successful in achieving this aim. The approach that the peer facilitator encourages is likely to be dependent on the course that is being studied and the assessment demands that it makes.

This view of the benefits of peer learning re-emphasises that peer learning needs to be considered in relation to the context in which it is set. Students' views of learning are largely based on their past and present learning experiences (Gibbs 1995). This means that their understanding of the roles of teachers and learners will partly reflect the course they are currently studying. Therefore, the structure of the course needs to be examined to see what approaches to learning students need to adopt to be successful on it. Also teachers' conceptions of the roles of teachers and learners also need to be examined as these will shape students everyday experience in the classroom and will have an impact on students views of these roles. Finally, as Prosser and Trigwell (1997) show, the views of teachers' are affected by the types of interaction that are encouraged by the institutions in which they work. Thus a consideration of
institutional managers' views of the appropriate roles of teachers and learners will give an insight into the possibility of lasting change in students' and teachers' views of teaching and learning.

2.6.3 Conclusion of the significance of peer learning for teaching and learning

I have shown that the traditional division between the roles of teachers and learners has hidden the significance of peer learning for conceptions of teaching and learning. It has led to an emphasis either on the benefits of peer learning to the peer facilitators or on the benefits to the students who are facilitated. However, when teaching and learning is viewed as a continuum the radical nature of the role of the peer facilitator becomes clear. The peer facilitator is a learner who also teaches. This dual role can increase the learning of the peer facilitator whilst also challenging their conceptions of what it means to be a teacher or a learner. The students who are facilitated can also increase their understanding of the course material. However, any changes in their understanding of the roles of teachers and learners will be more dependent on the structure of the course, and the institutional context in which, they are studying.

2.7 Criterion for Researching Peer Learning

An alternative criterion for the researching of peer learning can be drawn from the arguments put forward above that fit in with the three stages of this chapter:

1. The implementation of peer learning needs to be researched considering the context in which it has been implemented. This involves research to examine the place of peer learning within the institution. The implementation of peer learning needs to be an object of research itself, rather than it being assumed that it is a uniformly smooth process.

2. Results from individual schemes need to be treated with care. The research needs to be based on the scheme that is implemented. It cannot be assumed that this is very similar to the model that was produced before the scheme was implemented. The interaction between peer facilitators and the students facilitated needs to be considered, as does the effect of the training and support that the peer facilitators
receive. The types of students that use the scheme needs to be considered, and any examination of students' results be placed in the context of how they develop over the course of the year. Results from the individual schemes need to be placed within the wider context of the structure of the course and the institution in which the scheme is set.

3. The effects of peer learning on peer facilitators' and the facilitated students' conceptions of teaching and learning need to be considered. This needs to be placed in the context of the views of their teachers on the roles of teaching and learning. Finally, this must be placed within the institutional context, as only conceptions of teaching and learning that fit within the prevailing climate are likely to be sustained.

2.8 Conclusion

In this chapter I have set out the context of my research and defined peer learning. I have shown that the predominance of research on peer learning based on controlled experiments have led to three shortcomings in the existing research. First, there has been little consideration of the institutional wide implementation of peer learning. I have developed a criterion for the implementation of peer learning that can be used both as a guide to the implementation of schemes and for researching the implementation of peer learning schemes. Second, the previous research into peer learning has focussed on the outcomes of peer learning schemes. There has been little focus on the ways in which the schemes operate, and how they are affected by the courses on which they are implemented. I have suggested an alternative approach of methodological triangulation to overcome these problems and to develop a fuller picture of the way in which peer learning schemes operate. Third, I have shown that there has been little consideration of the affect of peer learning on students' conceptions of teaching and learning. This is because the research divides the role of teachers and learners in a way that hides peer learning's potential for changing students' views of teaching and learning. This potential comes from the role of the peer facilitator that involves both teaching and learning and so can challenge the traditionally static nature of the roles of teachers and learners. Finally, I have
developed a research criterion that overcomes these three shortcomings in the existing research. In the next chapter I show how the criterion informed the development of my research questions and how I put this research criterion into practice in setting out my research methods.
3.1 Introduction

In this chapter I describe the research methods I have used to investigate peer learning at Newham College of Further Education. This research was undertaken with the support of the college, and its name is used with the permission of the college. So as to protect their confidentiality, all of the students names used are pseudonyms.

4 Includes grids with a non-PSer comparison group.
Tables XI.1 and XI.2, in Appendix XI, set out the numbers of participants involved in each stage of this research.

Table 3.1 sets out the methods that I used to research peer learning. The numbers in each of the cells represent the sections in this chapter that deal with that part of the research design. Thus Section 3.2 deals with the research methods used in Chapter Four. Section 3.2.4 deals with the research, presented in Chapter Four, that was conducted with the students who were offered peer learning. In Table 3.1 it can be seen that the majority of the research has been conducted with the peer facilitators, the SI leaders and Peer Supporters (PSers), and the students offered peer learning. This is particularly true in Chapter Five, in which the focus of the research is the interaction between these two groups. However, in examining the implementation of peer learning the views of managers and teachers and my actions as the peer learning co-ordinator were investigated to demonstrate the effect they had on the form of peer learning that was implemented in the college. In Chapter Six, the significance of peer learning for teaching and learning is put in the context of the constructs of teaching and learning held by the students, teachers and the view of teaching and learning that was promoted within the institution through the institutional managers.

In describing my research design, I examine the research methods used in each of the research chapters. For each research chapter, I first show how the research questions for the chapter were developed from the criterion for researching peer learning developed in my literature review. I next give an overview of the research methods used to gather the data that is presented in that particular chapter. I then consider the research methods that were used in terms of the different participants involved in the research. After showing the research methods used in each of the chapters, I consider two issues related to my research approach. I explain the reason for using methods from a variety of research traditions and justify the use of methods from these different traditions. I then indicate how themes and quotations were identified from the textual forms of data.
In this research into peer learning I have examined the implementation, operation and significance of peer learning schemes in a holistic way that fulfils my research criterion and overcomes the shortcomings I identified in my literature review. However, my research has shortcomings of its own and these are identified in the research chapters and in my final, concluding, chapter. In these chapters I suggest ways in which the research could have been improved and future directions for research into peer learning.

3.2 Research Methods used in Chapter Four: Implementing Peer Learning

3.2.1 Development of the research questions from the criterion for researching peer learning

Chapter Four considers the implementation of peer learning. The criterion for researching peer learning deals with the implementation of cross-college peer learning strategies in its first condition:

1. The implementation of peer learning needs to be researched considering the context in which it has been implemented. This involves research to examine the place of peer learning within the institution. The implementation of peer learning needs to be an object of research itself, rather than it being assumed that it is a uniformly smooth process.

This condition is met by my first research question. The place of peer learning in the institution is considered by examining the views of managers, teachers, peer facilitators and the students offered peer learning on the implementation of peer learning. The implementation of Peer Support is compared with the previous implementation strategy that was used to implement Supplemental Instruction (SI), another form of peer learning. The research question is as follows:

1. *Was the alternative Peer Support implementation strategy more effective than the initial SI approach to the implementation of peer learning schemes in the college when it is examined from the perspective of managers, teachers, peer facilitators and students, and my perspective as the peer learning co-ordinator?*
3.2.2 An Overview of the research methods used in Chapter Four

Peer learning has operated at Newham College of Further Education for five years. During this time I have developed the implementation strategy, from offering a single peer learning scheme to courses, that of Supplemental Instruction (SI), to working with students and staff as they develop their own schemes of peer learning through the Peer Support implementation strategy. The research in Chapter Four was based on an action research approach to developing and evaluating the implementation of peer learning. The research examined two action research cycles. The first was focused on the implementation of SI and the second on the subsequent implementation of Peer Support, which developed out of the experience of implementing SI. This action research approach linked both my research and practice in implementing peer learning. This involved work with managers, teachers, peer facilitated and students who were offered peer learning as well as my experience, as the peer learning co-ordinator, of supporting these groups involved in peer learning.

In Chapter Four, the research presented is quite general. My self-study examined how my understanding of peer learning and its implementation developed over time. This included examining the approach taken to the design of peer learning schemes, and the approach taken in preparing those who were to be involved in the schemes. The research with the students offered peer learning, the peer facilitators and the teachers examined the implementation of peer learning in terms of those involved in the individual schemes. The research with institutional managers examined the implementation of peer learning from the perspective of the institution. My evidence relating to the development of the peer learning implementation strategy gives an overview to the working of the system of peer learning as a whole. I have used it to evaluate the success of the approach that has been taken to implementing Peer Support, when it is compared with the previous implementation strategy used to implement Supplemental Instruction.
3.2.3 Research into the implementation of peer learning involving Self Study

My self-study forms the underlying structure of my research into the implementation of peer learning in the college. The purpose of my self-study was to consider my influence, as peer learning co-ordinator, on the development and processes of peer learning in the college. Too often research into peer learning fails to consider the effect of those who research, co-ordinate, and offer support to those involved in, the schemes. My self-study drew on a variety of forms of data that illustrated how the implementation of peer learning developed over the five years of my research. I examined the development of peer learning schemes under the SI and Peer Support implementation strategies, I reviewed my work with the SI leaders in their support sessions, and I examined the papers that I wrote over the course of my PhD.

1. Examination of the development of SI and Peer Support

I examined the way in which SI and Peer Support developed over the time I implemented them in the college. I examined the schemes that were planned and ran over the 5 years that peer learning has operated in the college and the types of schemes that operated. I used this to compare the effectiveness of the two implementation strategies. This comparison was conducted using the criterion for implementing peer learning schemes that I developed in my literature review (see Section 2.4.4).

2. Notes from the support meetings with the SI leaders

I examined my notes from the support meetings that I held with the SI leaders in 1995-6. At this time I took detailed research notes of these sessions, as I sought to understand how students learnt to be SI leaders. Under the Peer Support implementation strategy, I no longer collected this data as the focus of my research changed from a narrow focus on peer learning schemes to a broader focus on the relation between peer learning schemes and the course, and the institution, in which they operated. However, the data collected under SI was still useful to show how schemes operated under this approach to implementing peer learning.
3. Review of the progress reports to my PhD. supervisor
I considered how my understanding of peer learning developed over the time I have been involved in researching it. I examined the reports I wrote to update my PhD. Supervisor of my progress over the course of my PhD, as these show how my understanding of peer learning in general, and SI and Peer Support in particular, developed over this period of time.

3.2.4 Research on implementing peer learning with the students offered PS

1. Levels of attendance at SI and Peer Support
I examined levels of attendance at the Peer Support schemes and compared these with the levels of attendance at the SI schemes. I did this to examine the effectiveness of the implementation strategy by evaluating whether it produced schemes that were seen as more relevant by the students. ‘Relevance’ was measured by attendance at the sessions because the majority of schemes were voluntary for students to attend. The experience of implementing SI had shown that if the schemes were not felt to be relevant to the students, then they would not attend.

The levels of attendance were collected through the registers that were taken by the SI leaders and PSers in their sessions. It was emphasised to the students who attended the sessions that these were taken for research purposes only and that their teachers would not be informed who attended.

2. Questionnaire to students offered SI/PS
I developed a questionnaire (see Appendix I) with which to evaluate the experience of students who attended PS. The questionnaire was made up of a mixture of open question, multiple-choice questions and attitudinal scales. This questionnaire had been developed through the experience of evaluating SI in 1993-4 and 1994-5, and through examining the literature on evaluating peer learning schemes (Topping & Hill 1995, Griffiths et al 1995).
In Chapter Four, I report on students' understanding of the support they were offered, and the reasons that those who did not attend gave for their non-attendance. Students completed the questionnaire in 1995-6 when SI operated and in 1996-7 and 1997-8 when PS was offered. They were distributed in students' classes at the end of the period over which the SI or PS scheme was run. The response rates were low, 24% in 1995-6, 31% in 1996-7 and 45% in 1998-9. This was because they were mainly distributed in the Summer Term just before the end of year examinations when attendance at classes were low.

3.2.5 Research on implementing peer learning with the PSers

1. SI leader/PSers Questionnaire

The SI leader/PSers questionnaire (see Appendix III) was distributed to all the students who acted as SI leaders/PSers towards the end of the second term in their support meetings.

I distributed them in 1994-5 and 1995-6 to the SI leaders and 1996-7 and 1997-8 to the PSers. The questionnaire had been developed through the experience of evaluating SI in 1993-4. It was a mixture of open questions, which focused on the SI leaders/PSers experience of supporting other students and their views of the approach taken to the implementation of SI/Peer Support, and a series of attitudinal scales in which SI leaders/PSers were asked about the benefits they, and the students who used PS, received from their involvement in PS.

The response rates to these questionnaires were high ranging from 100% in 1994-5 to 82% in 1997-8. However, the timing, and the method of distribution, of the questionnaire were likely to lead to a skew in the data towards positive experiences of being a SI leader/PSer. An effort was made to contact students who had withdrawn from being SI leader/PSers, but these students were few in number and no responses were received.
3.2.6 Research on the implementing peer learning with the link teachers

1. Questionnaire to link teachers whose courses had Peer Support schemes

It was not until 1997-8, under the Peer Support implementation strategy, that I began to focus upon the views of teachers to the implementation of peer learning in the college. This initial lack of attention to the views of teachers to the implementation of peer learning in the college, both under the SI and Peer Support strategies, highlights how my understanding of the implementation had developed and broadened over time.

The questionnaire (see Appendix VII) was distributed through the internal post to all those teachers who were involved in implementing a Peer Support scheme on their course in May 1998, and they were returned via the internal post. The response rate was 47%, with 8 teachers out of the 17 who were involved in schemes returning their responses. This questionnaire was made up with open-ended questions that sought to elicit teachers’ aims in using Peer Support, and their views on the implementation of Peer Support.

3.2.7 Research on implementing peer learning with institutional managers

1. Semi-structured interviews with four institutional managers

Interviews were conducted with four institutional managers in April 1998. The four managers interviewed were made up of the Vice-Principal of the college, and the three Faculty Directors.

I interviewed four institutional managers to discuss their views on the implementation of Peer Support, and before that SI, in the college. The interviews were semi-structured and lasted for about an hour. They were made up of a basic structure of open questions. However, the managers’ responses were followed up where

\[5\] Since this research took place, the faculties have been re-organised and there are now four Faculty Directors.
appropriate before the next question in the basic structure was returned to (see Appendix VIII for the basic structure of the interview).

The first part of the interviews focused on what the managers saw as the aims of peer learning at an institutional level, their understanding of the peer learning implementation strategy and the extent to which they saw it as integrated into the college's wider provision of learning support. The purpose was to examine how peer learning was seen to fit within the organisation by the managers of the institution. The second part of the interview focused on the relationship between peer learning and teaching and learning. This part of the interview was used to examine the significance of peer learning for teaching and learning and is dealt with in Section 3.4.5.

3.2.8 Conclusion to the research methods used in Chapter Four

I have described the research methods that were used in Chapter Four to investigate the implementation of peer learning. This chapter is based on action research approach to investigating the implementation of peer learning, and thus is structured through my self-study of the role I took in acting as the Peer Support, and before this SI, co-ordinator. This self-study is supported by my research with the students offered peer learning, the peer facilitators, the link teachers, and the institutional managers. I had invited these other participants to become more involved in shaping the research process but a lack of time and interest prevented this (see Section 4.3 for further consideration of this issue).

3.3 Research Methods used in Chapter Five: A Case Study of Peer Learning Schemes

3.3.1 The development of the research questions from the criterion for researching peer learning

Chapter Five deals with a case study of Peer Support on 'A' level Science. The second condition of the criterion deals with the researching of individual schemes. The criterion states:
2. Results from individual schemes need to be treated with care. The research needs to be based on the scheme that is implemented. It cannot be assumed that this is very similar to the model that was produced before the scheme was implemented. The interaction between peer facilitators and the students facilitated needs to be considered, as does the effect of the training and support that the peer facilitators receive. The types of students that use the scheme needs to be considered, and any examination of students results be placed in the context of how they develop over the course of the year. Results from the individual schemes need to be placed within the wider context of the structure of the course and the institution in which the scheme is set.

The research questions that fulfil this criterion are as follows:

1. How did Peer Support operate on 'A' level Science?
2. Did students with particular levels of previous academic achievement use Peer Support?
3. Were students with particular approaches to studying more likely to use Peer Support?
4. Did students gain from their involvement in Peer Support?

3.3.2 An overview of the research methods used in Chapter Five

The case study is of the two PS schemes that operated on 'A' level Science from October 1997 - May 1998, PS for first year 'A' level Science students (Y1s) and PS for second year 'A' level Science students (Y2s). The purpose of this case study was to examine the processes and effects of peer learning schemes. I selected the schemes on 'A' level Science because peer learning had operated on this course for four years prior to the majority of the research conducted. The experience of running peer learning at Newham, as well as the literature on introducing innovations into education (for example see Hord 1987), has shown that it takes about three years for schemes to be fully established and to run in an effective way. This appears from experience to be because it takes time for students and teachers to learn about the scheme and the way in which it operates, and to fit the scheme with the course it is to support. The schemes on 'A' level Science had reached a stage where they were more
integrated into the course than other schemes that were run in the college. These particular schemes were based on the SI model of peer learning, with the sessions taking place outside of the main curriculum and the attendance of students who are offered support being voluntary. Peer Support was offered by Y2s to Y1s and by an ex-'A' level student, now studying at University, to the Y2s. The primary focus of the case study is the PS for Y1s, with the results from PS for Y2s being used to provide a comparison and additional evidence on the way that Peer Support schemes operated.

In my literature review I concluded that methodological triangulation was an appropriate way of examining peer learning schemes. As Winter (1996) argued

"each method partly transcends its limitations, by functioning as a point of comparison with the others. Several different methods may thus seem to converge on one interpretation, thereby giving grounds for preferring it to other interpretations which are suggested by only one method of investigation" (p. 16).

The research in the case study focused on the experiences of the students offered support and the PSers. In the case study I examine the operation of PS on 'A' level Science in attempt to examine how the structure of the course and the implementation and operation of the PS scheme affected its outcomes. I also examined which students used PS in terms of their previous academic achievement and their approaches to studying. Finally, I examined whether the students who use PS appeared to gain from their involvement in the schemes. These results are placed in the context of the students who used PS and the structure of the course, as well as the qualitative evidence about how Peer Support operated on 'A' level Science.

3.3.3 Research into the case study of peer learning schemes with the students offered PS

As I showed in my literature review, see Section 2.5, traditional approaches to investigating the benefits of peer learning to the students who are facilitated have ignored the actual workings of the sessions, their understanding of the role of peer facilitators, and the relationship between the structure of the course and the students
who use and benefit from peer learning. In the case study of the PS schemes on ‘A’ level Science, I examined whether particular types of students used and benefited from PS. I relate these outcomes to the structure of the course and the interaction between the PSers and PSUs in the PS sessions. I used the responses of ‘A’ level Science students to the end of year evaluation questionnaire, described in Section 3.2.4, to examine their understanding of, and attitudes towards PS.

1. Students’ previous academic performance

In examining students’ previous academic performance, I used GCSE results Y1s and GCSE results and results in the end of first year exams for the Y2s. These were provided by the PS link teacher on ‘A’ level Science.

2. Approaches to studying questionnaire

I also examined whether students with particular approaches to studying used PS. I used Richardson’s (1990) version of the Approaches to Study Questionnaire (ASQ) (Entwistle and Ramsden 1983) (see Appendix IX for a copy of the questionnaire distributed). This measures whether students adopt a meaning or reproducing orientation in their studies. The ASQ has been found to produce conceptually meaningful results, especially with respect to the meaning and reproduction dichotomy. (Meyer and Parsons 1989, Harper and Kember 1989). This is detectable from a range of traditions. Speth and Brown (1988) used an inventory made up of items from three traditions and found that meaning and reproduction approaches were clearly identifiable in the students’ responses. Although versions of the ASQ has also been used to identify other approaches, for example Entwistle and Ramsden (1983) found an achieving orientation and Lonka and Lindblom-Ylaine (1996) found four approaches, these have not been consistently replicated.

I examined students’ approaches to studying because there is some evidence that students with meaning orientated approaches to studying are more likely to use schemes such as Peer Support. Norton and Crowley (1995) found in evaluating a series of ‘Learning to Learn’ workshops, the students who take a surface approach, as opposed to a deep approach, to their studies may not attend. If the factors are examined, as characterised by Ramsden & Entwistle (1981), that in Richardson's
(1990) questionnaire make up meaning or reproducing orientation, then students using a meaning orientation appear more likely to use Peer Support as they take more responsibility for their own learning:

*Meaning Orientation:* Active questioning in learning, readiness to map out subject and think divergently, relating to other parts of the course, relating evidence to conclusions.

*Reproducing Orientation:* Pre-occupation with memorisation, over-cautious reliance on details, relying on staff to define learning tasks, pessimism and anxiety about academic outcomes.

I distributed the first ASQ to the Y1s in October 1997. The response rate was 62%. The ASQ was distributed to the Y2s in June 1997, i.e. at the end of their first year of studying ‘A’ levels. The response rate was 60%. The ‘A’ level Science link teacher distributed these questionnaires in one of the students’ lessons.

3. Students’ performance in their end of year exams

Examinations of academic performance can either be done through the examination of students achievement in course work and examinations or through tests designed to evaluate students learning of the particular aspects of the course. Cohen et al (1982) found that more positive results were reported when specially designed tests were used. However, the end of year examination results of the Y1s and Y2s were used to evaluate students’ academic performance. The ‘A’ level Science link teacher provided these.

These end of year examination results were used rather than Y1s’ and Y2s’ performance specially designed tests for three of reasons. First, the task of designing and conducting such tests was beyond the bounds of my resources. Second, the college, which provided the funding for Peer Support, is interested in students’ performance on their courses. If Peer Support was to be considered to be successful within the college it needed to raise students achievement on their courses not in specially designed tests. On ‘A’ level Science this was measured through the promotional exam at the end of Y1 and the ‘A’ level results at the end of Y2. Third,
PS on Y1 and Y2 focused on students tackling past papers, and so the aim of these sessions was to prepare students for these examinations. This means the results gave an indication of the success of the sessions in terms of its preparation of students for their end of year exams. However, it must be stressed that it was the PSers and PSUs who decided on this focus, and it was not suggested by neither myself, as the Peer Support Co-ordinator, nor by the ‘A’ level Science teachers.

4. Questionnaire to students offered PS

I used the Y1s responses to the end of year questionnaire distributed to all students offered PS (see Section 3.2.4 for further details) to investigate the extent to which the PSUs understood the purpose of Peer Support. I also used the questionnaire to examine how they felt they benefited from their involvement in Peer Support. The Y1s response rate for this questionnaire was 63%.

The questionnaire to the Y2s was different (see Appendix II). It was only distributed to those who attended PS and was designed by the PSer for this scheme. This feedback was collected in the last PS session of the year. Only seven students completed this questionnaire.

5. Observation of PS sessions

I observed three of the PS sessions for Y1s studying Chemistry, Biology, one of the sessions for the Y1s studying Chemistry, Physics, Pure and Applied Mathematics and Statistics, and one of the sessions for Y2s. The purpose was to examine the nature of the interaction between the PSers and the students supported by PS. I observed more of the sessions for first year Chemistry, Biology, Pure Mathematics and Statistics for two reasons. First the sessions for Chemistry, Physics, Pure and Applied Mathematics and Statistics ended in February 1998 when I was due to undertake my second observation. Second, the PSer for Y2s had run sessions in the previous three years and so I had observed many of her sessions in these previous years (see Section 5.3.5 for further details).
3.3.4. Research into the case study of peer learning schemes with the PSers

1. Focus group with PSers

I conducted a focus group discussion with the PSers from ‘A’ level Science. The students were first tape-recorded discussing a series of questions (see Appendix IV) relating to their experience of acting as PSers and their views on the implementation strategy. To allow for the possibility that some students might not express their opinions in full in a group setting, the students then wrote individual responses to the questions. The whole process took an hour and a half and was held during the students’ free time in college.

2. Examination of PSers journals

During their time as PSers, the students kept a journal of each of their sessions. This has been done in previous studies on peer learning (Lundeberg & Moch 1995, Johnson 1995). These looked at what the PSers planned to do in their sessions and what happened in the sessions. I developed an approach to PSers’ journals over the previous 2 years and a draft structure is provided in Appendix V, which was used to gather evidence on PSers’ understanding of their sessions.

3.3.5 Conclusion of research methods used in Chapter Five

In the case study of PS schemes I focus on the experience of the students offered Peer Support and the PSers. However, I place these in the context of the way in which the schemes operated and the course that the PSUs were studying. I examine the types of students who used PS on Y1 and Y2, and the interaction between the PSers and PSUs. In this way I have gathered evidence from a variety of sources which can be triangulated and compared to suggest a single interpretation of the data gathered.

However, little qualitative research was undertaken with the Y1s and Y2s compared with the qualitative data gathered from the PSers. Originally, I had planned to conduct some more qualitative research with the Y1s and Y2s. I wanted to conduct focus groups with students who attended PS to examine their experiences of PS, and their views on how the approach taken to PS fitted with their course. I also wanted to
conduct a focus group with students who did not attend PS to examine their views on, and understanding of PS. However, the students concerned were not interested in participating in this research and so the majority of my qualitative research with students is from the work with PSers. As I had a closer working relationship with them, and they had invested more work in PS, they were willing to become involved in my research. However, this does mean that the students involved in the qualitative side of my research are those who are more likely to be positive towards Peer Support.

3.4. Research Methods used in Chapter Six: The Significance of Peer Learning for Teaching and Learning

3.4.1 Development of the research questions from the criterion for researching peer learning

Chapter Six deals with significance of Peer Support schemes for teaching and learning. This was dealt with under the third condition of the criterion. This stated:

3. The effects of peer learning on peer facilitators’ and the facilitated students’ conceptions of teaching and learning need to be considered. These need to be placed in the context of the views of their teachers on the roles of teaching and learning. Finally, this must be placed within the institutional context, as only conceptions of teaching and learning that fit within the prevailing institutional climate, in relation to teaching and learning, are likely to be sustained.

The research questions dealt with in Chapter Six fulfil this criterion:

1. Did involvement in Peer Support affect peer support users’ and peer supporters’ approaches to studying?
2. Did involvement in Peer Support affect peer supporters’ constructs of teaching and learning? How did peer supporters’ constructs of teaching and learning relate to their fellow students’ and teachers’ constructs of teaching and learning?
3. Was there a link between institutional managers’ views of the roles of teachers and learners and their understanding of Peer Support? What are the prospects for the development of Peer Support within the institution?
3.4.2 An overview of the research methods used in Chapter Six

My research in this chapter examined the significance of peer learning for teaching and learning. I examined whether involvement in PS appeared to change PSUs' and PSers' approaches to studying. I also examined whether PSers changed their constructs of teaching and learning after their involvement in Peer Support. I placed any changes in the PSers’ constructs in the context of their fellow students’ and teachers’ constructs of teaching and learning. To place all of these in the context of the institutional approach to teaching and learning, I examined the relationship between the institutional managers’ views of teaching and learning and their understanding peer learning. This allowed me to examine the prospects for the development of peer learning within the institution.

3.4.3. Research into the significance of peer learning with students offered PS

1. Approaches to studying questionnaire

This research was conducted with the Y1s. I have already outlined the completion of the first ASQ in Section 3.3.3. The second ASQ was completed in June 1998. In total, 35 students completed the first and the second ASQ, an overall response rate of 32%. The reason for this low response rate was that the second questionnaire was completed at the end of an examination, which many students had left early.

The measurements from the ASQ were taken to examine the effect that attending Peer Support had on students approaches to learning. A similar questionnaire has been used by Kember et al (1997) to evaluate other educational innovations in terms of increasing students’ participation in their learning experience.

In theory, peer learning could help students develop their learning approaches for three reasons. First, it could help to prevent negative attitudes to study and help those supported to organise their study methods. Some argue (Clarke 1986, Watkins and Hattie 1985) that it is these elements of the surface approach to learning that have the largest negative effect on performance. Second, Ramsden et al (1989) found that
educational institutions in which students felt there was supportive teaching, coherent structure, an emphasis on autonomy and a moderate stress on achievement, tended to produce students who took a deep approach to learning. However, the perception that students’ institutions had an extreme emphasis on achievement, with teaching narrowly focused on exams, correlated with a surface approach. Peer learning can be seen as a way of promoting a supportive environment and so in this way may help students to take a deep approach to their learning.

I used the questionnaire to examine how the students’ offered PS approaches to studying developed over the time PS was offered. It is the change in their approaches to studying over this time that I have considered rather than approaches themselves. I used the results to see if there is a relationship between the change in the measure of students’ approaches to studying through the year and their attendance at PS. I examined the questionnaire in more depth to look at the elements that make up the approaches, rather than simply the deep and surface scores. The results from the ASQ gave an insight into how involvement in Peer Support affected students’ understanding of learning on their course.

3.4.4 Research into the significance of peer learning for teaching and learning with the PSers

1. Approaches to studying questionnaire with the PSers
I asked the PSers who ran PS on Y1 to complete the ASQ (see Appendix IX for a copy of the questionnaire distributed). All of the seven PSers completed two ASQ, one in October 1997 and one in May 1998. The two ASQs were used to examine how PSers’ approaches to studying developed over the time they were involved in Peer Support.

2. Repertory Grids
In order to look at whether the PSers’ perceptions of teaching and learning changed during their time as PSers, I used repertory grids. Repertory grids were developed by George Kelly (1955) as a way of eliciting people’s constructs without giving them pre-defined constructs to choose from and without basing their responses on
questions that the researcher asks. Instead participants are asked to think of people who fulfil certain roles, and their constructs are then elicited through the participants comparing and contrasting the people who fulfil each role.

Repertory Grids have been used extensively in educational research for a variety of purposes. For example, to compare postgraduate students and research staffs constructs relating to research (Diamond & Zuber-Skerritt 1986, Zuber-Skerritt 1987), to enable students to reflect on their professional development and provide feedback to the course team (Fisher et al 1991), and to examine how students construe their lecturers and how lecturers construe their students (Ryder 1987). They have been criticised (Yorke 1987) for only representing the start of the process of eliciting participants’ constructs. This is because examining the grids in isolation from the participants thinking behind them tends to result in rather bland and general descriptions rather than specific accounts of the participants’ constructs.

In this study, I elicited repertory grids from PSers from PS on Y1 at the start of the academic year in October 1997 and towards the end of the academic year, in May 1998 through one-to-one interviews. In eliciting the PSers’ understandings of the roles of teachers and students, I have gathered evidence of the constructs they used when entering a teaching and learning situation.

In order to put their grids into context with other Y2 students, I also elicited two grids each with three students who the link teacher on ‘A’ level Science informed me could have been selected as PSers. These grids were also elicited through one-to-one interviews in October 1997 and May 1998.

I piloted the use of repertory grids with PSers between April and May 1997. Part of the reason for this pilot was to identify the most effective way of eliciting the grid. This was because the elements that make up the grid, the way they are introduced and the ensuing procedures will affect the constructs that the participants provide. Based on my pilot study, participants were asked to think of five teachers and five learners
they had encountered. These provided the elements for the grid. A sample grid is provided in Appendix VI. These elements were then compared and contrasted. Participants were asked to think about three particular elements and say how two were the same and one was different in relation to teaching and learning situations. They were then asked to consider a different group of three of their elements. This led to them expressing a series of bipolar constructs that were recorded on the grid. Once they felt they had elicited all of their relevant constructs, they rated each of the teachers and learners according to each construct. They rated them from 1 to 7, according to the pole of the construct that was most like them. With ratings of 1 and 7 referring to either pole of the construct and ratings of 2, 3, 4, 5, and 6 referring to different points between these two poles. I then asked the participants to rate themselves in the same way according to each construct. In the case of PSers this involved them rating themselves as a PSer, as a student and their ideal self, whereas the non-PSers rated themselves as teachers, students, and their ideal self. The reason for this difference is that those who are not involved in PS are unlikely to understand the role of a PSer. Finally, I asked all participants to rate their elements out of 10 for their effectiveness as teachers or learners and then to rank their constructs in terms of importance to the roles of teacher and learner. This is a development of an idea from Pope and Denicolo (1993) and helps to address a criticism from Yorke (1987) that repertory grids give no indication of the structure of participants' repertory systems.

3. Focus group discussion

Some of the questions from the focus group interview with the PSers were also used to support the evidence on the development of the Y1s and their approaches to studying and their constructs of teachers and learners (see Section 3.3.4).

The responses to the question on how the Y1s benefited from PS were used to support the evidence of the development of the Y1s approaches to studying. The responses to the question on how the PSers benefited from their involvement in PS was used to support the evidence on how their approaches to studying had developed over time. The evidence on how the PSers constructs of teaching and learning had developed was drawn from the questions on the relationship between PS and teaching, the
PSers’ definitions of teaching and learning, and their views on how their views of teaching and learning had developed over the time they were PSers.

3.4.5 Research on the significance of peer learning with the link teachers

1. Repertory Grids
In order to place the examination of the PSers’ and non-PSers’ repertory grids in context, repertory grids were elicited in one-to-one interviews from the full-time teachers from ‘A’ level Science. These were completed during the teachers’ administration time. These were conducted in the same way as was outlined in Section 3.4.4, with the teachers asked to rate themselves as teachers, students, and their ideal self.

3.4.6 Research on the significance of peer learning with institutional managers

1. Interview with institutional managers.
The second part of the interview, which was outlined in Section 3.2.7, examined what the managers saw as the role of the PSers and how this related to the roles of students and teachers. The managers were also asked to define teaching and learning. The purpose here was two fold. First it was to gain an idea of the institutional conceptions of teaching and learning and, second, it was to map individual managers’ views of teaching and learning onto what they felt was desirable in PS schemes in terms of the roles of PSers and PSUs.

3.4.7 Conclusion of research methods used in Chapter Six
In Chapter Six, I examine the significance of Peer Support for teaching and learning. To do this, I examined the development of Y1s’ and PSers’ approaches to studying to investigate whether involvement in PS led to changes in their approaches. I also examined how PSers’ constructs of teaching and learning developed over the time they were involved in PS. This was placed in the context of the development of their non-PSer fellow students’ constructs of teaching and learning, and the constructs of their teachers. To place all of these constructs of teaching and learning into an
institutional context I examined four institutional managers’ views of teaching and learning and related these to their views on peer learning. This also allowed me to examine the likely future development of peer learning within the college.

3.5 Issues Arising from the Use of Research Methods

Two issues are raised by my use of research methods that I have outlined above. First, I have used research techniques from a variety of research traditions. I need to show that such traditions are compatible. Second, I have used a lot of data that will be presented in the form of text. This raises the issue of how extracts from this data were selected.

3.5.1 On the use of research techniques from a variety of research traditions

In my research design I used a mixture of quantitative and qualitative research methods to examine the different aspects of Peer Support at Newham College of Further Education. I did this because of the relative strengths of the two types of data. Quantitative data can give an excellent description of what is happening at an aggregate level, and is therefore useful in identifying trends. However, it cannot be used to explain these trends, nor can it be used to consider individual cases. Qualitative data can give excellent details of individual cases but do not normally allow generalisation to the aggregate level.

However some of these methods are based in very different research traditions. For example, using the ASQ and repertory grids together, at first may seem contradictory. Kelly (1955) argued that repertory grids allowed for the fact that people differ in their conceptions of the world; that is different people understand the world in different ways (individuality corollary). Although some people do construe the world in the same way (commonality corollary), that some people differ from each other does mean that the constructs offered by the ASQ may not be appropriate to the specific constructs that people hold about their approaches to studying. The ASQ uses pre-defined constructs to define peoples’ approaches to studying, and it is not clear that
people evaluate their approaches to studying using the concepts in the questionnaire. For example, Zuber-Skerrit (1987) argued that if questionnaires use the language of the researcher, then these may be alien to the constructs of the participants.

However, whilst this criticism is well founded, at an aggregate level the ASQ does seem to give a reliable description of the two types of approaches to studying. These types have been consistently found in interview studies since Marton and Saljö (1976) first identified them. In using the ASQ and repertory grids together, I am attempting to combine the relative strengths of qualitative and quantitative research. The ASQ will give a simplified indication of how the PSers approaches to studying develop over the year, whilst the grids will provide specific, qualitative data on how their individual constructs that relate to teaching and learning and how these develop over the year.

The use of a combination of quantitative and qualitative methods from different research traditions is not unacceptable. What is important is that these methods are used appropriately and that conclusions are drawn with care. However, this form of academic rigour is equally important when only quantitative, or only qualitative, methods from a single research tradition are used.

### 3.5.2 Approach to analysis of textual data

A number of the forms of data in the research outlined above are presented in the form of text. The extracts from progress reports to my PhD supervisor, the notes from the support meetings with the SI leaders, the focus group with the PSers, the PSer journals, the interview with the institutional managers, all are presented using extracts from a much larger amount of data. These extracts were not selected because of their convenience for the argument that I present. There were two methods of selection based on the type of evidence that was being used.

First, some of the text extracts presented are the result of answers to questions that dealt directly with the issue being investigated. For example, the institutional
managers’ responses to the questions about the implementation of Peer Support are used in this direct way.

Second, text extracts are used as examples of themes that have been identified within the text. For example, the institutional managers’ views of teaching and learning, and Peer Support, were identified through examining their interviews as a whole. This was also the case with the PSers views on teaching and learning drawn from their focus group interview. In both of these cases themes were identified from a reading of the whole interview and quotations used that illustrated these themes. Similarly, in quoting extracts from the PSers journals and from the support meetings with the SI leaders, themes were identified through examining all of the PSers journals and all of the transcripts of meetings with the SI leaders. Extracts were then identified that exemplified these themes.

Although such an approach does not guard completely against the erroneous identification of themes, it does prevent single quotations being taken out of context from a longer interview. The process would have been improved if another person had been asked to examine the data and identify their own themes, as a check on the themes I had identified. This was not done because in working in the rather isolated context of Further Education a likely candidate who was interested in undertaking this role could not be identified. There were equally no resources to encourage an external person to undertake this role.

3.6 Conclusion to Research Design

The research approach I have presented was designed to build up an overall picture of the operation of the peer learning strategy within the college. It examined how the different elements relating to peer learning interact with each other. I have used the research methods in this chapter to meet the criterion I established for researching peer learning schemes.
I have used these research methods to examine the implementation, the operation and significance of a peer learning strategy from the perspective of students, peer facilitators, teachers, and managers, as well as considering my perspective as peer learning co-ordinator. The drawback of this holistic approach was that only one peer learning scheme in the college was examined in any detail. However, within the limited resources available for the research a choice had to be made between either developing several case studies of schemes, with no understanding of how the schemes fitted with the overall strategy, or examining the overall strategy with a single case study of how a scheme works. In this research I decided to build up a picture of how the strategy operated and to provide an insight into how one particular scheme, Peer Support on ‘A’ level science, operated under this strategy.

In the research chapters I show the outcomes from the research process I have outlined above. However, I also examine the shortcomings of the approach I have taken to researching peer learning at Newham College of Further Education. I suggest ways in which this research could have been improved and directions for future research into peer learning.
CHAPTER FOUR: IMPLEMENTING PEER LEARNING: AN EVALUATIVE COMPARISON OF THE SI AND PEER SUPPORT APPROACHES TO IMPLEMENTING PEER LEARNING SCHEMES ACROSS THE COLLEGE

4.1 Introduction

4.1.1 Summary of the Chapter’s Argument

In this chapter I evaluate the two implementation strategies that were adopted to promote peer learning schemes in the college. I conclude that the Peer Support strategy to implementing cross-college peer learning strategies was more successful than the approach based upon the SI (Supplemental Instruction) strategy. It was more successful when the strategies were compared from the perspective of the students offered peer learning, the peer facilitators, and my perspective as peer learning co-ordinator. The evidence on whether it was more successful for teachers is inconclusive, as teachers’ views were not collected on SI. However, it is clear that they valued the Peer Support approach. The institutional managers, in general, felt that the Peer Support approach was more successful, although not all of the managers held this view.

However, whilst the Peer Support strategy was more successful than the SI strategy it still had some significant problems. First, it cannot be said to have been cross-college in the sense of covering even the majority of the college’s students. Second, those schemes that did operate were not fully embedded and so could disappear if the staff involved in establishing them moved on, whether inside or outside of the institution. Different ways of developing the strategy are suggested.

I conclude that the success of the Peer Support implementation strategy underlines the importance of involving students, teachers and managers in the implementation of
peer learning. This is because this is the best way to fit the schemes to the context in which they will operate.

4.1.2 The structure of the chapter

I first set out the research question that I have considered in this chapter. Second, I summarise the action research approach I took to developing my implementation strategy. The stages in this approach form the basis for describing the SI and Peer Support implementation strategies. Third, I describe the approach taken under the SI implementation strategy and show how the shortcomings led to the development of the Peer Support implementation strategy. Fourth, I describe the Peer Support implementation and analyse the views of students, peer facilitators, teachers, and managers to the Peer Support implementation strategy and compare this with their attitudes to the SI implementation strategy. Fifth, I compare the two strategies from my perspective as the co-ordinator of the strategies. This is represented by the criterion for implementing cross college peer learning schemes that I developed in Chapter Two. I examine the shortcomings of the Peer Support strategy and suggest an approach to overcome these shortcomings. I conclude by examining issues with my analysis and interpretation of data. I show the importance of fitting the implementation of peer learning to the context in which it will operate leads to a different role for the implementer of cross-college peer learning schemes. I recommend that the approach to the implementation of peer learning set out in this chapter is tested in other institutions.

4.2 Research Question

The following research question is considered in this chapter:

1. Was the alternative Peer Support implementation strategy more effective than the initial SI approach to the implementation of peer learning schemes in the college when it is examined from the perspective of managers, teachers, peer facilitators and students, and my perspective as the peer learning co-ordinator?

In answering this question I compared the two implementation strategies that were adopted to promote peer learning schemes in the college. The first was the
implementation strategy based on the Supplemental Instruction (SI) programme. The second, the Peer Support strategy, is the implementation strategy that was developed in response to the shortcomings of the SI implementation strategy. These two approaches are evaluated from the perspectives of the different participants in the schemes.

4.3 Looping the Loop: An Action Research approach to developing the peer learning implementation strategy

Over the time I implemented both SI and Peer Support in the college, I observed, and reflected on, the effectiveness of my approach. This involved me in a process of action research (for a discussion of the advantages and limitations of Action Research and their relevance to this research see Appendix XII). Action research is defined by Winter (1996) as

“ways of investigating professional experience which link practice and the analysis of practice into a single developing sequence and link researchers and research participants into a single community of interested colleagues.”

(p.14).

As the SI, and then the Peer Support, Co-ordinator I linked both the research and the practice in my work. This co-ordination role involved implementing peer learning in the college, training and supporting the peer facilitators, and monitoring and researching peer learning. I invited the other participants in peer learning (the managers, teachers, peer facilitators and students offered peer learning) to be involved in shaping the process of researching the implementation of peer learning. However, a lack of time and interest, on their side, prevented this. The lack of time stemmed from the difficulty in actively involve others in the research process when no resources exist to support this. The lack of interest was caused by our different levels of involvement in peer learning. Whilst for me peer learning was at the centre of my professional practice, for students, teachers and managers it was a relatively small, and non-essential, part of their work. The vast majority of their work could continue without an involvement in peer learning, whereas peer learning was my work.
Figure 4.1: Action Research Loop adapted from Zuber-Skerrit (1996) p. 95

Figure 4.1 shows the action research loop that can be used to represent the process I went through in developing my approach to implementing an institution-wide peer learning strategy in the college. I use the stages in this loop to set out the development of the implementation strategy. It is important to note that the different parts of the process set out in Figure 4.1 did not always take place at different times. For example, some of the observing of, and reflecting on, the SI and Peer Support implementation strategies I did whilst I was carrying out the implementation, or acting, phase and my reflection on SI and planning for Peer Support overlapped. To help to illustrate this I give the dates during which each stage was carried out.

In setting out the process I first describe the planning, the acting, the observing, and reflecting stages of the SI implementation strategy. Second, I set out the stages in the action research loop for the Peer Support implementation strategy. The reflection part of this loop will be represented by comparing the two approaches according to the criterion for the implementation of cross college peer learning schemes which was developed in my literature review (see Chapter Two, section 2.4.4) and through my suggestions for changes to the strategy based on this.
4.4 A word about the data collected and its presentation

In setting out my approach to the implementation of peer learning schemes I draw upon my interviews with the Institutional Managers (IMs), and material I gathered and evaluated at the time I was involved in the two implementation strategies. The interviews with managers were conducted in April 1998, and their comments about the initial implementation of SI are in retrospect. The quotations are drawn from answers to questions about the implementation of peer learning in the college (See Appendix VIII for a full list of the questions).

The types of research data I collected over the 4 years of my research have changed. This is because my understanding of researching the implementation of peer learning schemes changed in the way I set out in my introductory chapter. Due to this change in my understanding, I changed the methods that I used to gather data and the types of data that I gathered. For example, when I was implementing SI I did not include the teachers who were involved in setting up schemes on their courses in the evaluation of the implementation strategy because I had not recognised the importance of their feedback on the schemes.

4.5 The SI Loop:

4.5.1 Planning: The initial introduction of SI to the college - June 1993 to September 1993

1. An introduction to SI

My first steps in developing peer learning schemes was through the running of Supplemental Instruction (SI). SI was established at the University of Missouri Kansas City in 1973. In its original form this scheme has the following characteristics:

- SI targets ‘high risk’ courses. These are defined as courses which, historically, have a 30% or greater failure and withdrawal rate. These courses are defined as
conceptually difficult rather than the students being seen as ‘difficult’ or the teaching being seen as ‘poor’.

- SI involves students, SI leaders, who have completed a course, or elements of a course, offering support to all the students, SI users, who are studying that course, or the elements of the course that the SI leader is supporting.

- The support is offered in weekly sessions that take place outside of the mainstream curriculum. The SI users' attendance at these sessions is voluntary. The SI leaders are paid for the support sessions that they offer.

- The SI sessions begin at the same time as the course so that problems can be picked up as they occur, rather than providing support once problems have been identified.

- The SI leaders do not teach new course material, but instead structure the sessions to facilitate the SI users sharing, processing, and restructuring of course material through group discussion and exercises. The assumption is made that whilst most users will see their problems as content-based, they are in fact process-based. In other words, the SI users’ difficulties are not due to a lack of knowledge but are instead due the SI users lacking the skills they need to restructure their knowledge. The SI leaders attend the lectures of the course that they are supporting so that they can model appropriate learning behaviour.

- The SI leaders receive an initial two day training on learning theory and the SI approach, and on-going support as a group of SI leaders from a central SI Co-ordinator. The SI Co-ordinator identifies the courses to be supported and administers the scheme.

- No scheme is set up without the agreement of the academic teachers on the course that is to be supported. They select the SI leaders and issues are fed back to the teachers by the SI leader.


SI has spread within the United States, as well as to Universities in the UK, Sweden, Denmark, Australia, and South Africa. In the UK certain changes have been made to the SI approach:
• There has been less of an emphasis on establishing SI on ‘high risk’ courses. In the UK SI has been promoted as much because of interest in its potential to develop students transferable skills as its ability to reduce drop out and increase achievement.

• In the UK SI leaders are usually second years who support first years on the same course, whereas in the U.S. SI leaders tend to be any students who have studied a similar course before, irrespective of how long ago they completed it. Thus, the peer element of SI could be said to be stronger in the UK.

• SI leaders do not attend the classes of the students they are supporting. This is due to the perception that UK students have more taught hours and so less time to attend the classes of other students than their U.S. counterparts.

(See Rust & Wallace 1994).

2. The introduction of SI to Newham College of Further Education

SI was introduced at the college as a management initiative in September 1993. This was after a team from the college had visited the SI scheme at Kingston University. The H.E.F.C.E. report on SI describes how the Principal of the college was "very quick to see what the possible potential of the scheme would mean in his sector" (Kingston University 1994, Development Section, p.1). In the first year, I was employed for 6 hours a week to implement SI on four courses, having been an SI leader, and then helped in the co-ordination of SI leaders, whilst an undergraduate student at Kingston University. This pilot was considered enough of a success that in 1994-5, the college advertised for a full-time SI co-ordinator to promote the scheme in the college. I was employed as the SI co-ordinator and so given full responsibility for implementing and developing the SI programme across the college.

3. Why was SI introduced in the college?

In my interviews with the four institutional managers (IM 1 - 4), two reasons were given for the introduction of SI in the college. On one level it was introduced to increase retention and achievement in the college and at another level it was introduced as part of, as one manager described it, “a fundamental initiative to rediscover learning within the college”(IM3). In relation to this second level, there appeared to be disagreement not only about SI’s role but also the desirability of the
college’s approach in ‘rediscovering learning’. The link between these two levels is that both are ways of increasing the cost-effectiveness of supporting students in their learning.

Improving the retention and achievement of students was, and is, a major issue for the college. The F.E.F.C, based on the achievement and retention figures for 1994-5, recommended that the college should “address the problems of poor attendance and retention in some areas . . . (and) improve examination results” (F.E.F.C. 1996 p.25 paragraph 90). Three out of the four managers, directly or indirectly, mentioned SI’s purpose as being to increase retention and achievement in the college.

“One of the reasons I think we chose Peer Support was because it looked like it could improve, significantly improve, achievement rates on academic courses.” (IM4)

“Peer Support is there to aid their (students’) learning and offer additionality to the learning delivered by the instructors and lecturers. Probably also helps the people leading the group as well, there’s a bonus for them, possibly some financial but also aiding their CV’s and so on and their experiences and ultimately to improve pass rates and retention.” (IM 1, emphasis added)

“If it (Peer Support) is a cost effective way of improving student learning, if you can measure that in terms of students staying on courses, students achieving better, then I would see it as a long term programme . . . I think if your talking about whether it’s here long term, you’ve got to be talking financially. That really does mean what impact does it have on retention and achievement, possibly recruitment, you might say that if it were a clear feature of the college, if students were choosing it because of that. But certainly retention and achievement. Because that’s where the money is coming from, you’ve got to be doing the simple equation of costs of doing it against the results you’re achieving. It’s got to be that really.” (IM2)

As well as SI being introduced to increase retention and improve achievement, it was also introduced as part of an attempt to change the approach taken in the college to the promotion of students’ learning. The role of teaching staff was changing, and has continued to change, from that of traditional teachers to that of managers of the teaching and learning process (F.E.F.C. 1996, Paragraphs 31 and 78). This has meant
that the teacher’s role is to design the range of experiences that students will meet on their course, but it is no longer always their job to deliver these experiences. When they do deliver these learning experiences there has been pressure from above for them to be less didactic in their teaching and to act more as facilitators.

To promote these changes, as well as to reduce costs, there has been a reduction in taught hours on courses and an increase in the role that instructors, study coaches, and other support services have played in students learning. This attempt at change in approach was mentioned by all four of the interviewees. However, there was disagreement not only about the role of SI in promoting this change but also about the desirability of the change itself.

Two of the managers were clearly in favour of changes in the approach to promoting learning in the college. They saw the role of the SI leader as a model for the role that teachers should play within this new approach to the promotion of learning (However, I show in Section 6.5 that these managers attached different meanings to the word ‘learning’).

“Ultimately if we’re looking at a learning experience, the best I’ve ever seen, I don’t think there would be a difference between whether they were a Peer Supporter or a lecturer. I think the role is the same. They’re helping learners learn. I don’t think there is a difference. You should be bringing it out of the learners not trying to pour it into the learner. So ultimately I’d like our lecturers to become more like Peer Supporters ... I think the lecturer needs to be more of a facilitator of knowledge” (IM1).

“Peer Support which is focused on the process is actually part of that rediscovery, in fact, I think that’s one of the key things to be done is the rediscovery of how learning takes place. I don’t think that we have teachers who are skilled in learning ... It is also beginning to undermine the institutional status of teachers. We have too many teachers who do too much of the wrong thing in teaching ... A large part of this institution is rooted in the ‘60s and ‘70s technical college culture in the vocational areas. In the broad humanities areas it’s still stuck in a very liberal, general studies type culture. There is a sort of ideal type, a purist type, of these 2 positions. Vocational specialists, this is a crude caricature, who think ‘these are the

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6 In their interviews the managers refer to Peer Support, rather than SI, and PSers, rather than SI leaders. This is because the interviews were conducted after the change had been made from SI.
Another of the managers clearly felt that there was a need for teachers to change their approach to the promotion of learning. However, this interviewee suggested that SI leaders should be operating in a framework that was established by the teachers, rather than providing a model for an alternative approach to teaching.

"(W)e need to look for effective ways of supporting students that go beyond traditional teaching . . . I think there’s a bit of a continuum from the teacher who doesn’t take any notice of whether people are learning through to the teacher who actually learns with the students because they are going through a joint process . . . I think for the majority of our teaching staff you’d see a very clear difference between that teacher and the learner. You know my belief is that teachers necessarily need to understand what learning’s going on and they need to support the learning and at the same time take responsibility for designing the package . . . As a college a lot of the teachers are at one end of that spectrum and they need to move to the other end a bit.” (IM 2)

The other manager seemed less sure of the change in approach to the promotion of learning and appeared to suggest that teaching was being wrongly undermined in the college.

"Teaching teaches someone how to learn and Peer Support facilitates someone understanding something which isn’t necessarily about teaching them how to learn . . . The struggle we have to understand what teaching is often has the effect of down grading and discounting teaching because it is so hard to define. So we say ‘if it’s only about facilitating then anybody can facilitate’, but then I don’t think it is only about facilitation. I think this question is one of the reasons why so many teachers and lecturers feel so insecure because they feel they know what they are bringing to the job, they feel they know what they are bringing to the student experience, and the learning experience, but it is very difficult to articulate and so everyone says ‘let’s look at the skills of teaching’ but if you have those skills I don’t think you are a teacher. I think it’s a quantum leap to say you have the qualities and skills of a teacher, therefore you are a teacher.”(IM4)

Whilst there was disagreement about the changes in the status of teaching in the college and SI’s role in promoting these changes, this can be linked with the desire to
use SI to increase retention. Both can be seen as ways of improving financial efficiency. Teachers are an expensive resource when compared to study-coaches, instructors, and especially students. Increasing retention and achievement increases the college’s income from the F.E.F.C. This cost-effectiveness was mentioned directly by one of the managers and indirectly by another manager. It is perhaps not surprising that these were the two interviewees who saw the role of SI leaders as a model for teachers as, to repeat the words if not the sentiments of IM4, “if it’s only about facilitating then anybody can facilitate”.

“The students are getting less directed hours from staff so we need to supplement their learning with all other ways that are cost-effective and if there’s one thing (Peer Support is) it’s cost effective. It’s not costing us too much to run it.” (IM1).

“(A) lot less will be taught by teachers within the classroom, within workshops. A lot more will be done flexibly through open study centres through a variety of contexts. Now you’re got to give them a different form of learning support to the learner. That’s where Peer Support will come into it. So there’s an expanding stage for Peer Support.” (IM4)

SI was introduced into the college to help to improve the retention and achievement of students. It was introduced into a system where there were changes being introduced to the roles of teaching staff and some managers felt that SI could contribute to this change by presenting an alternative model of students learning together. However, there was not a consensus amongst the senior managers about the desirability of these changes. Some thought that teachers still would play an important role in designing the curriculum, whilst others seem to suggest that the teachers’ role would become marginalised in the college. What linked these two objectives in introducing SI, was that both could be related to financial efficiency. If retention and achievement were improved, then the college would receive more funding, and if alternative learning experiences could be provided by cost-effective non-teachers, then this would cut down on the numbers of hours that the college would need to spend on comparatively expensive lecturing staff.
4.5.2 Acting: The implementation of SI in the college - September 1993 - June 1996.

As has been shown, SI was implemented into a system where the roles of teachers and learners were changing, and there was conflict about these changes. As SI was being used as one of the ways of promoting these changes then it is not surprising that there was also resistance to SI. SI was implemented in a top-down way, with a very visible senior management support for it. However, teachers and middle-managers had not requested the type of support provided by SI. Within, this difficult situation SI was implemented in accordance with the SI model as it has been adapted in the UK. This meant the focus of the implementation was on the SI leaders and SI users, rather than on the teachers who agreed to have SI supporting their courses.

SI was implemented in the college from the top-down. As one of the managers stated:

"I think in 1993 the reaction of the institution was ‘Here comes this new principal. He’s got some ideas that he picked up whilst travelling around America. It sounds good but it’s been forced upon us.’ That was one of the problems, that it was top-down, or a lot of people did see it as and in many ways they were right; it was being forced. I’m not necessarily opposed to that because you’ve got to start somewhere.” (IM3).

The implementation followed the SI model of only implementing it on courses where the academic staff said that they were interested. However, given the Principal’s vocal support for the scheme, it is likely that pressure was applied to encourage courses to pilot the approach. The Vice-Principal was directly involved in helping to establish the pilot programme for SI. It was promoted through a series of high profile staff development exercises involving a large senior management presence as an excellent way of supporting students’ learning. One of the institutional managers felt that SI was promoted as a miracle cure for the college’s retention and achievement rates:

“It was presented as a saviour to the academic performance and I think that was probably enthusiastic and over optimistic really” (IM 4).
This top-down approach to the implementation was different to the introduction of SI into most institutions in the UK and the U.S., where it is teachers on courses who saw the need for, and potential of, SI. It is they who usually set up an initial pilot, often receiving external funding to do this (see Marshall 1994). The alternative and centralised approach of the college had certain advantages in terms of the institution making a commitment to the scheme, through the provision of resources. However, it also meant that the scheme was introduced to teachers and middle-managers who had probably not felt, and certainly had not expressed publicly, that there was a need for it.

The implementation adhered to the SI model as it has been adopted in the UK in the following ways:

• It was set up only on courses where the teachers requested it
• The teachers selected students to act as SI leaders
• The SI leaders received two days training on leading the sessions
• The SI sessions started at the beginning of the academic year
• The SI sessions took place outside of the curriculum and the attendance of SI users was voluntary
• The sessions were based around group-work. The SI leaders were instructed not to give the SI users answers and instead were asked to help the SI users to solve their problems by working with other SI users.


The observation of SI began in earnest in September 1995. At this stage I focused mainly on the feedback that I was receiving from the SI leaders in the weekly group supervision meetings.

The SI leader feedback on the schemes was not totally positive. Whilst claiming they gained a lot from running the schemes, they reported that teachers did not appear to be very supportive of what they were doing. They reported that the students who were
offered the support did not attend the sessions and when they did attend they didn’t
seemed to find the SI approach helpful. They said that they felt confused about the SI
approach as they found it very difficult to run the sessions without giving answers
and did not feel the training they received was adequate to enable them to do this.

The SI leaders did not feel that their teachers supported SI. For example in December
1995 on average they rated the support they received from their teachers as 2.7 out of
5, compared to rating of 4.2 out of 5 from the SI Co-ordinator. In the support sessions
with the co-ordinator they reported feeling that their teachers were not fully behind
the schemes on their courses.

The SI leaders reported that the students attending SI saw the SI leaders as teachers.
A graphic example was given in a Supervision meeting in November 1995:

"Jean Marie said he had found the (his previous SI) session difficult. The
students said to him ‘Give me an answer, you don’t say nothing. Give me
an answer, you are the teacher’. Jean Marie said he’d replied ‘No, I’m not’
but the student replied ‘Yes you are. Tell me!’" (East Ham Campus
Supervision 23rd November 1995).

Some of the SI leaders clearly thought there was an over emphasis on not giving
answers. The SI leader who ran the most successful sessions in terms of student
attendance wrote in an end of year report in June 1996:

“I had a lot of trouble not answering the students questions. I felt that a
more appropriate method of running the SI session would have been by
going over questions in their work book together and by so doing, we could
then learn and practise procedures together, as opposed to trying to get
answers to students questions from other students who also did not
understand how to answer questions put by their fellow students . . . By
stating at the very beginning that the SI leader will not be answering
questions from the students I think it put off the students who would have
best benefited from the SI sessions.” (Report from SI leader June 1996 p.2)

The training of the SI leaders did not seem to prepare them for their role. They
wanted more training but it was apparent that the training they were receiving was not
the type of training they needed. In their feedback on the scheme the SI leaders
requested more training. However, when I asked in a Supervision session in February
1995, how the SI leaders learned to run a session, 4 out 10 mentioned the training. They focused more on the experience of running sessions (10 out of 10) and the support they received in supervision (8 out of 10). Responses like these were common:

“I personally do not feel that the training offered equips you for an SI session because we all have individual approaches to things and this is the same with being an SI leader. The more you familiarise yourself with the concept, through experience and constructive criticism you understand more.” (Venda)

“Mainly through trial and error. You get a few things from the training with which you experiment in your first few sessions and it is from these that you start to develop your own techniques.” (Shazia)

“The training helps but when you start with students you feel you have started learning and every week you learn more.” (Abdi)

The feedback from the SI leaders suggested that their teachers and the students they were supporting did not seem to want to become involved in the SI approach. Teachers were not supportive of the scheme and the students felt it was not the kind of support they wanted. The SI leaders suggested that the training they received was inadequate to allow them to take up their role. They felt that they had not received enough training but it appears that they had not received the right type of training.

4.5.4 Reflection: Analysing the problems with the SI implementation strategy - March 1996 - June 1996

“The experience of implementing SI at Newham College of Further Education has not found its aims of increasing achievement and reducing drop out realised, nor has it supported as many students as was hoped.

There has been a lack of attendance at the sessions by the students being offered support. From feedback received from both the SI leaders and those they sought to support, it appears that these students did not see the support offered by SI as relevant for their studies. They did not see SI as part of their course, or as something that would help them. Some of those who did attend were looking for answers to their immediate problems, and were met with someone who would not give them answers and who would not tell them how to write assignments.
There has only been limited liaison between the SI leaders and the members of teaching staff. Teaching staff gave the impression that they viewed the scheme as something separate from the running of the course. Some responded very negatively to any feedback the SI leaders gave about the learning experience of the students they were supporting.” (Progress Report to PhD Supervisor 1st March 1996).

As the quotation above illustrates, after three years of attempting to promote SI in the college, my doubts about my initial approach to implementing it began to crystallise in March 1996. Despite having excellent SI leaders, attendance at the sessions was low. This seemed to be a structural rather than a teething problem. I began to realise that the SI leaders and SI users viewed the SI sessions in very different ways and this led to a conflict of views of what the sessions should be about. The SI leaders, having received two days intensive training, wanted to help the SI users to find their own answers, whilst the SI users wanted the SI leaders to give them the answers. The students who attended SI did not seem to understand what it was about. I wrote at the time:

"SI users have little ownership of SI. They are faced with a scheme with a name they do not understand, led by students who promote values of learning they do not fully understand themselves and these other students are not allowed to give them the answers but are not quite sure why.”(Progress Report to Ph.D. Supervisor 1st March 1996).

I began to realise that a different approach to peer learning was needed so that the understanding of leaders and users of how to structure a group-work session could develop together, rather than the SI leaders starting to run their sessions in a way that the SI users neither understood or valued.

In April 1996, I began to see the different perceptions of the SI leaders and SI users as an issue around ownership. The SI leaders felt strong ownership of the scheme whilst potential SI users, as well as teachers, saw the schemes as irrelevant to their work. The obvious answer seemed to be to offer teachers and students the opportunity to develop their own models of peer learning through offering them a range of Peer Support schemes.
I realised that the change process was more complicated than I had first thought. I was introducing SI into an educational system that was changing. Teaching staff were fighting changes in their role and SI was seen as a part of these changes. This meant that their lack of interest in the scheme was probably inevitable.

“When people have been working in an environment for some time, they have a stake in the status quo. They know what is expected of them, they know how it operates, they know what elements they have control of, what effect they can have . . . In changing the way they think about the organisation people need to be careful. In particular, they need to establish whether the proposed change is one of simply rhetoric, which if they act on may lead them into a double bind situation, or one of action, in which they have to establish in what way they are required to think about the organisation. To get either of these wrong may result in sanctions from the organisation.” (Progress Report to Ph.D. Supervisor 22nd April 1996).

From my reflection I saw that SI was not running successfully in the college. There appeared to be three key issues that I needed to address:

1. Teachers lack of interest in the SI scheme which seemed to be caused by the feeling that it was a management initiative that was irrelevant to their needs.
2. The fact that SI users were not attending in large numbers which seemed to be due to the SI users seeing SI as largely irrelevant to their perceived needs.
3. The feedback from the SI leaders that they felt under-prepared for their role and did not understand why they could not give students answers.

4.6 Peer Support Loop


I realised that as the SI Co-ordinator I had the responsibility of finding a way to make peer learning relevant to teachers and students and to help the SI leaders to take up their roles. I reconsidered the implementation of a cross-college peer learning strategy in the college. I decided to offer students, peer facilitators and teachers options in peer learning from which they could use to develop their own schemes. In this way they could design schemes that were relevant to their perceived needs and could design their own roles within the scheme so that they would have a better understanding of
them. In order to stress the flexibility of the new approach, I changed the name of peer learning in the college to Peer Support, as this suggested a range of possible models rather than the single model of SI. I did not reject the SI ethos; I used this ethos to develop parameters for any scheme that was developed. These changes represented a shift from a top-down to a bottom-up implementation strategy.

From offering students and staff a single scheme of peer learning, SI, I moved towards working with them as they developed their own models of Peer Support which were relevant to their practice. This would also enable them to understand their role within the schemes. I wrote at the time:

"The idea then is that through giving teachers and students control over the process of developing Peer Support, they will then develop psychological ownership of the scheme." (Progress report to Ph.D. Supervisor 22nd April 1996)

This led to the development of the options in designing Peer Support schemes that are set out in my literature review (see section 2.5.1). These I planned to use with students and staff to develop their own schemes of Peer Support. I thought that Peer Support could be used as a model for introducing changes in the relations between students and teachers on courses:

"As Peer Support is a marginal part of the course, the course can run without it, and it is initially introduced by an external agent, it is a low risk setting in which students and teaching staff can experience the changing relationships between them that it involves. As students and teaching staff are in control of the process, they are in control of how much these relationships shift. The hope is that once students and staff have experienced these new relationships through the introduction of Peer Support, this may alter how they conceive each other and each other's roles. If this can be achieved it offers the potential for change throughout the organisation of the course." (Progress Report to Ph.D. Supervisor, 22nd April 1998)

In this new approach to the implementation of Peer Support I retained certain elements of the SI ethos. It was not the SI ethos that I was rejecting; it was the approach to implementing SI. The elements I retained were:
• The idea of targeting difficult courses, or more specifically difficult elements of courses. This means accepting that some areas are harder than others and this is often the cause of student difficulty, rather than under-prepared students or poor teaching staff (Wilcox & Koehler 1996).

• The assumption that skills cannot be developed in isolation from the context in which they are to be used. Skills are developed from involvement in particular tasks, rather than from handling hypothetical situations (Wilcox & Koehler 1996).

• The PSers would be paid for the time they put into Peer Support, unless they were using the experience to help to gain a formal qualification. The students do not ‘do it for the money’ but members of staff are not expected to give their time for free and so it is not clear why students should.

• The idea that PSers are not ‘mini professors’ (Center for Supplemental Instruction 1998). There is no point in students doing a poor imitation of their teachers by standing up to lecture to 100 other students. The great strengths of using PSers are two-fold. First, there are potentially a large number of them, so they can offer greater individualised support to other students at a lower cost than other support mechanisms. Second, they have a more similar experience of learning the course material, and studying at the institution than teachers. As one student who was supported responded in April 1997. “Our teachers have expertise and experience in the subject area, whilst the PSers see the work in the way we do and understand why we find it difficult.”(Response from student questionnaire in April 1997).

The changes I planned represented a shift from a top-down implementation strategy in which teachers were encouraged to use a model they had no part in shaping, to a bottom-up strategy in which I worked with PSers and teachers as they designed their own peer learning models.

In implementing Peer Support I altered the approach I took to working with teachers, the training and ongoing support that I gave to PSers, and the way I helped the PSers to approach their sessions.

The implementation strategy was based on the list of options in peer learning that is set out in my literature review. I met with teachers on courses and discuss what form of Peer Support would be most appropriate on their course. We agreed in the light of the Peer Support scheme that was developed, what training and on-going support the students would receive and whether I, or they, or both of us, would provide this support. We also agreed how the scheme would be evaluated.

On all of the courses, either it was agreed I would train and support the students, or I would do this with the teacher who was involved. I changed the approach to training the students who would offer support. Rather than delivering the generic two day training at the start of the academic year, I began delivering training that was designed for the particular scheme. The training was shorter, from between an hour and half a day depending on the complexity of the PSers’ role. It was focused on briefing the PSers on their role (see Appendix X for PSers’ briefing notes) and discussing any changes they would like to make in this, raising their awareness of how they learn, and helping them to prepare for their first session. The emphasis was then put on supporting the PSers once they had started their sessions.

This ongoing support changed. The PSers met with me and any other PSer involved in their scheme. I stopped running group supervision for all PSers from a particular campus. The emphasis on learning theory was reduced, and was only used when it was relevant to what the PSers had experienced in their sessions. The PSers were encouraged to run the sessions in a way that made sense to them. Rather than starting with the SI model and educational theory and asking the student leaders to attempt to run their sessions in this ideal way, I started with their understanding of what type of
session would be useful on their course. I then worked with them to refine this over the course of the year. This meant that there was no longer such an emphasis on not giving answers, but instead on using the sessions to maximise the Peer Support Users' (PSUs') participation.


I observed several aspects of the Peer Support implementation strategy. In this section I will put this in context where possible by comparing it with the equivalent data under the SI implementation strategy. I will compare the number and diversity of schemes under each implementation strategy, the student take up of Peer Support and SI, student awareness of the support on offer, reasons students gave for non-attendance, and the PSer feedback on the scheme. I will then set out the teacher and manager feedback on the schemes. Each of these can be used to show the success of the implementation when compared with the SI implementation strategy.

1. The Number and Diversity of Peer Support Schemes

If there was no change in the number and types of scheme developed under the Peer support implementation strategy when compared with the SI implementation strategy, then this would suggest that the change was simply one of name and not of the substance of the schemes. However, there was an increase in the number and the diversity of the peer learning schemes that were developed under the Peer Support implementation strategy when it is compared with the SI implementation strategy.
Table 4.1: A comparison of the number and diversity of peer learning schemes under the two implementation strategies

Table 4.1 shows the number and diversity of schemes that were developed under Peer Support and SI. It shows that the number of schemes operated rose with the introduction of the Peer Support implementation strategy. Graph 4.1 illustrates how the number of schemes operated rose sharply in 1996-7, the year that the SI implementation strategy was replaced with the Peer Support implementation strategy.
Between 1995-6 and 1996-7 the number of courses supported doubled. Before this the increase was about 50% a year. In the two years following the setting up of SI in 1993-4, the number of SI schemes had increased by 80%, whereas in the two years of Peer Support the number of schemes increased by 156%. It is not clear whether this is due to the change in implementation strategy or to the idea of peer learning gaining more currency in the college over time. However, in 1997-8 the increase dropped to 120%. This suggests that even if the change to the Peer Support strategy had led to an increase in the number of schemes, this approach was now approaching its limits.

Table 4.1 also shows that whilst more schemes were run under Peer Support, that it was more likely for schemes that were planned at the start of the academic year under Peer Support not to run. This is probably one of the factors that accounts for the change in success rates under Peer Support and SI. Under Peer Support, if teachers and students were not really interested in a scheme, because the scheme relies on their input, it would not run. Whereas with SI, once the teacher agreed in principle to the scheme it was set up and any lack of interest only became clear once work had gone into setting up the scheme.

Under Peer Support, more schemes were set up during the year than was the case with SI. This was due to the fact that if students or teachers came forward with schemes they wished to develop, they could work on their own idea rather than being asked to fit their idea into the SI model. Also, under the Peer Support implementation strategy, schemes began to change their structure if the scheme did not appear to be working or to fit with the course. This was not the case under the SI implementation strategy.

The remaining headings in the table are based on the options in Peer Support that I developed in my literature review (see section 2.5.1). There was an increase in the diversity of schemes that were run under the auspices of Peer Support. First, whilst under SI the schemes all used the SI structure, under Peer Support teachers and students began to design their own schemes of Peer Support.
Second, there was an increase in the success rate of schemes that were established. Success, in the context of the table, is measured by the level of students' attendance and the PSers being used in a way that did not just imitate the role of a didactic teacher. The most successful schemes were those designed by teachers, and this is perhaps what would be expected. Teachers and students are best placed to design a scheme that will fit with their courses but teachers are in a better position than students to give the scheme the support and credibility it needs to be seen as relevant by the students who are to be offered support. The SI schemes, as well as those designed by students, that were unsuccessful were unsuccessful due to low attendance. The type of low attendance that is being considered here is when the average attendance at each session is less than one; that is when often no students will attend the sessions. The unsuccessful schemes designed by teachers tended to be those where teachers attempted to use PSers to act as cover for a shortage of teaching staff. These schemes only came to light when teachers had establish them and then asked me to organise the payment of students concerned.

Third, schemes were designed that involved the running of occasional sessions for a particular purpose rather than running sessions all year round. These schemes were designed by teachers either to support particular projects or assignments that students traditionally found difficult or to support students during the process of induction into the course and the college. Some schemes were designed that operated inside the curriculum, during students timetabled lessons. These sessions were by necessity those designed by teachers, as it is they who organised the timetabled sessions.

Fourth, PSers helped students on different courses to themselves, this mainly happened through student designed cross college schemes. For example, students organised schemes where they helped other students in the Open Study Centre, where students receive help with mathematics and English. This scheme was organised in liaison with the manager for this service, but the initial design came from the students.
The implementation was successful in terms of an increase in the number and the diversity of the schemes that it has produced. The main increase in schemes has been through the establishment and extension of student and teacher designed schemes, and an increase in the rate of successful schemes. However, the slow down in the rate of increase in the number of schemes suggests that the strategy may have reached its limit and needs to be developed further if the number of courses involved in Peer Support is to continue to grow.

2. The level of student involvement in the schemes

The number and diversity of schemes has been increased but have these schemes been more relevant to the students offered support? Relevance in this context will be measured by student attendance at the schemes, and in the next section by student feedback on the schemes. The attendance of the students offered support increased. Their awareness of the support they are offered increased and the reasons that the students who chose not to attend changed. These factors suggest that the support has become more relevant to their needs.

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<tbody>
<tr>
<td>No of sessions run</td>
<td>326</td>
<td>219</td>
<td>121</td>
<td>105</td>
<td>60</td>
</tr>
<tr>
<td>Hours of SI/PS students received</td>
<td>2424</td>
<td>1627</td>
<td>417</td>
<td>298</td>
<td>169</td>
</tr>
<tr>
<td>Average Attendance</td>
<td>8.2</td>
<td>7.4</td>
<td>3.6</td>
<td>2.8</td>
<td>2.8</td>
</tr>
<tr>
<td>Students attending ≥ 1 sessions</td>
<td>677</td>
<td>395</td>
<td>132</td>
<td>130</td>
<td>76</td>
</tr>
<tr>
<td>Regular attenders (attending ≥ 3 sessions)</td>
<td>380</td>
<td>195</td>
<td>67</td>
<td>49</td>
<td>31</td>
</tr>
<tr>
<td>Regular attender rate</td>
<td>80%</td>
<td>49%</td>
<td>51%</td>
<td>37%</td>
<td>41%</td>
</tr>
</tbody>
</table>

Table 4.2: Take up of Peer Support compared to SI

Table 4.2 is based upon the figures I gathered on the take up of SI and Peer Support at the college. It shows the take up of Peer Support in 1996-7 and 1997-8 compared to SI in 1993-4, 1994-5, 1995-6. It is interesting to note that the most sessions per scheme was achieved in 1994-5, under the SI implementation strategy, when an average of 17.5 sessions run per scheme. This was because under Peer Support some

7 Does not include the 200 students who attended the one-off Peer Support sessions.
schemes were designed to involve only a few sessions, whereas all SI schemes were designed to run for the academic year.

Graph 4.2: Number of Sessions Offered by Year

![Graph 4.2: Number of Sessions Offered by Year](image)

Graph 4.2: Number of peer learning sessions offered by year

Graph 4.2 illustrates the increase in the number of sessions that were offered over the course of the year. The number of sessions run nearly doubled between 1995-6 and 1996-7. This would be expected given the increase in the number of schemes that were operated. However, whilst there has been an increase in the number of sessions, this increase was still too low for Peer Support to be considered a fully cross-college initiative.

Graph 4.3: Number of Users attend at least one and at least three sessions

![Graph 4.3: Number of Users attend at least one and at least three sessions](image)

Graph 4.3: Number of students who attended at least one and at least three peer learning sessions by year

Whilst the increase in the number of schemes and sessions do not conclusively show the success of the Peer Support implementation strategy, the increases in the level of
attendance do show that those schemes that ran were more relevant to the students to whom they were offered. Average attendance under the SI implementation strategy had been low. Under the three years that SI ran average attendance only increased by 29%. When the Peer Support implementation strategy was introduced in 1996-7 the average attendance rose by 105%. This rise slowed in 1997-8, but, as Graph 4.3 shows, there was a big increase in the number of students attending at least three sessions. If the Peer Support schemes where students could only attend one session are not included, then 80% of students who attended one Peer Support session in 1997-8 would go on to attend at least three. This is a huge increase on previous years and shows that whilst there was a need to increase the coverage of Peer Support schemes, the schemes that were being designed under Peer Support were much more relevant to the student users than those which were run under the SI strategy.

However, the 786 students, acting as both PSers and PSUs, in 1997-8 represented only 5% of the college’s total enrolment and 19% of the college’s full-time students. Even this assumes that no students are involved in more than one scheme. Therefore, Peer Support in 1997-8, whilst involving more students than were involved in SI, could not be said to have operated throughout the college.

3. Student awareness of the schemes

tables 4.3 and 4.4 are based upon the annual evaluation questionnaires that I distributed to students offered support in 1995-6, 1996-7, and 1997-8. They summarise students’ responses to an open questions about what is the purpose of SI or Peer Support. Responses are not included from students offered SI in 1993-4 and 1995-6 because this question was not asked in the questionnaires that were distributed in these years.

<table>
<thead>
<tr>
<th></th>
<th>PS 1997-8</th>
<th>PS 1996-7</th>
<th>SI 1995-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help from other students</td>
<td>19%</td>
<td>62%</td>
<td>27%</td>
</tr>
<tr>
<td>Help on course</td>
<td>5%</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td>Help on course from other students</td>
<td>70%</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>Didn't know or didn't respond</td>
<td>6%</td>
<td>13%</td>
<td>58%</td>
</tr>
</tbody>
</table>

Table 4.3: Peer Support & SI Users response to "What is Peer Support / SI?"
In order to allow for comparison the figures for 1996-7 and 1997-8, the two years under which Peer Support were offered, are based on the schemes which are attached to a particular course and where students attendance at the sessions was voluntary. In 1996-7, this made up 13 of the 18 schemes and in 1997-8, 10 out of the 22 schemes.

The responses show that students' knowledge and awareness of the support on offer has increased over the three years being examined. On the courses where students were asked to complete the questionnaires both Peer Support and SI can be seen as being made up of two elements. The first is that it is support that is provided by other students, the second is that it is support that is designed to support students in completing their course. Students' awareness of one or both of these elements have increased over the years.

It could be argued that this is part of the process of the schemes becoming more embedded on courses over time. However, there are three reasons why this is probably not the case. First, both in 1996-7 and 1997-8, on over half of the courses this was the first year that any form of Peer Support had run. Second, the awareness of students increased as a percentage of those offered support, rather than as a raw figure. Third, the differences between the figures is very large. Whilst 13% of those who attended Peer Support in 1996-7, and 6% of those who attended Peer Support in 1997-8 appeared not to know what it was, the figure for those attending SI was 58%. Over half of those who attended SI did not seem to know what it was about! This may be due to an issue of language, in that students were clearer about what Peer Support meant than they were about the meaning of SI. This would still show that the Peer Support implementation strategy is more effective, as finding a language of support

<table>
<thead>
<tr>
<th></th>
<th>PS 1997-8</th>
<th>PS 1996-7</th>
<th>SI 1995-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help from other students</td>
<td>23%</td>
<td>38%</td>
<td>14%</td>
</tr>
<tr>
<td>Help on course</td>
<td>15%</td>
<td>7%</td>
<td>6%</td>
</tr>
<tr>
<td>Help on course from other students</td>
<td>39%</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Didn't know or didn't respond</td>
<td>23%</td>
<td>50%</td>
<td>77%</td>
</tr>
</tbody>
</table>

Table 4.4: Peer Support & SI Non-Users response to “What is Peer Support / SI?”

117
that students understand is one of the major issues in raising awareness of the support that is on offer.

<table>
<thead>
<tr>
<th></th>
<th>PS 1997-8</th>
<th>PS 1996-7</th>
<th>SI 1995-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>I did not know about it</td>
<td>31%</td>
<td>56%</td>
<td>22%</td>
</tr>
<tr>
<td>I did not have time</td>
<td>31%</td>
<td>30%</td>
<td>71%</td>
</tr>
<tr>
<td>I could not attend at the time of the session</td>
<td>39%</td>
<td>10%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Table 4.5: Peer Support & SI Non-Users responses to "Why did you not attend?"

The figures in Table 4.5 are again drawn from the annual questionnaires distributed to those offered support on courses where the sessions were held outside the mainstream curriculum. The table highlights the three main reasons given for non-attendance at sessions offered under both SI and Peer Support. The figures show that there was a shift in the reasons that students gave for non-attendance at the support offered. Under SI, the main reason offered for students not attending was a lack of time. Under Peer Support, the reasons shifted. In 1996-7 the main reason was that students did not know about the support, and in 1997-8 it shifted again to students not being able to attend at the time of the session. These shifts again point to the success of the change in the implementation strategy. To give as a reason for non-attendance that you were not aware of the opportunity for support, or you were unable to attend, suggests that you might have attended if you had known. To say that you did not have time suggests that the support was not valued. This suggests that Peer Support has more relevance to students, particularly when this is coupled with the increase in the numbers of students attending Peer Support sessions. This shows that the change in the implementation strategy has been successful in increasing the relevance of the support offered.

4. SI leader/PSer feedback on the implementation strategies

In examining the views of the students who acted as SI leaders and PSers, I have looked at the feedback they gave on the support they received and the benefits they reported receiving from acting as SI leaders and PSers. These indicate the success of the Peer Support implementation strategy.
As I set out earlier, the way in which I worked with PSers was different from the way I had worked with SI leaders. Whilst SI leaders all received the same 2 days training, the training the PSers received varied according to the scheme that they were involved in. Whilst SI leaders received group supervision with all of the other SI leaders on their campus, the on-going support the PSers received was only with the other PSers involved in their scheme.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of PSers/SI leaders</td>
<td>78</td>
<td>30</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>Number of sessions run</td>
<td>275</td>
<td>219</td>
<td>121</td>
<td>105</td>
</tr>
<tr>
<td>Rating of Training</td>
<td>4.1</td>
<td>3.5</td>
<td>4.1</td>
<td>4.0</td>
</tr>
<tr>
<td>Rating of ongoing support</td>
<td>4.6</td>
<td>4.5</td>
<td>4.1</td>
<td>4.2</td>
</tr>
<tr>
<td>Rating of support from Teachers</td>
<td>3.6</td>
<td>3.5</td>
<td>2.9</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Table 4.6: Number of SI leaders / PSers and their feedback

Table 4.6 shows the number of students who acted as SI leaders and PSers and the average rating out of five they gave the support they were offered in taking up their roles.

The table shows that the number of students who acted as PSers per scheme was about the same as those who acted as SI leaders. The table shows that the PSers did not particularly rate the support lower than the students who had been SI leaders. These are the ratings that were given at the end of the academic year, rather than at the end of the training. This is important as the PSers received less training than the SI leaders. It did take a while for the training for PSers to be refined and this accounts for the drop in the rating of the training in 1996-7. The ratings of the on-going support also increased under Peer Support. This suggests that putting the effort into supporting the PSers in developing their own models has been successful.
Table 4.7: Benefits students felt they gained by being a SI leader / PSer

Table 4.7 shows the benefits that the students who acted as SI leaders and PSers reported receiving in their end of year questionnaires. It can be seen that the benefits that students reported have increased when the move was made from SI to Peer Support. This is important not because it proves that the students did gain more but because it can be seen as a reflection of students’ attitude towards the experience of leading schemes. The fact that the PSers felt they had gained more than the SI leaders felt they had gained, shows that they were probably more positive about the experience. This supports the view that the Peer Support approach to peer learning better prepared students to lead the schemes.

5. Teachers’ attitudes to Peer Support

The views of the teachers involved in SI had not been gathered. Under Peer Support I realised that their feedback was important. It was not until 1997-8 that I gathered the teachers’ views on the schemes that had been run. The feedback from teachers supports the views that the diversity of schemes was greater under Peer Support than under SI.

Teachers aims in using Peer Support varied. These aims can be split into three different types of aims. Two of the teachers saw Peer Support as way of providing their students with additional support for their course. These two were the ones out of the eight respondents who used Peer Support schemes based strongly on the SI model. For others, three out of the eight respondents, it was the ‘peer’ element of Peer Support that was paramount. The aims of these respondents focused on using the experience of PSers on the course to support other students and to increase interaction.
between the years. A third model, cited by three of the respondents, was that Peer Support was an integral part of the course. For these respondents Peer Support was used to deliver crucial learning experiences on the course.

The teachers were happy with the support they received in developing their schemes. Seven out of the eight respondents felt that they had just enough say in the design of the scheme. This suggests that the Peer Support approach of allowing teachers to design their own schemes worked well.

The teachers all said that they felt that the students had benefited from attending the support that was offered. Four of the eight felt that the students had improved their academic performance, three felt that the students had increased their skills, and one that the students had increased their confidence by attending Peer Support.

In looking at the benefits to the PSers, one respondent said that they had been disappointed by the low attendance of the students who were offered the support. The other seven felt that the PSers had increased their confidence and self-respect.

Whilst the views of teachers were only collected about one year of the Peer Support implementation strategy, it does appear that they valued the flexibility of the approach. In fact, half of the respondents mentioned this flexibility as a positive aspect of the strategy. This feedback, the increase in the number of schemes that were run, and the willingness of teachers to design their own Peer Support schemes, suggests that from their perspective the Peer Support approach is more relevant to them than the SI implementation strategy.

6. The Institutional Managers’ views on the change from SI to Peer Support

The institutional managers were all aware of the change in approach from SI to Peer Support. However, they were divided in their assessment of the effectiveness of the Peer Support implementation strategy and the way in which peer learning should be implemented in the future. One was generally happy with the approach. Two were but felt that the Peer Support programme should be more cross college, although they
differed in the way to achieve this. Finally, one of the managers felt that the SI model should have been kept in its 'pure' form except that it should have been made obligatory for poor performing courses.

The managers differed in their views of the implementation strategy. One was generally happy with the approach that had been taken.

“I think what we’ve talked about over the past couple of years is actually moving it forward from bottom-up i.e. working with tutors. That’s been about cajoling and persuasion, discussion and analysis of the costs and the benefits of it . . . I think it’s shifted now. From introducing it, no debate about it, no discussion, it is going to happen, that’s shifted to a bottom-up development. Within a context where there’s still strong management support, leadership for it in terms of keeping an eye on it, looking at the evaluation reports, monitoring, resourcing it. But it’s then becoming an established part of the college. It’s no longer requiring any special managerial attention, because it’s a programme that’s developing.” (IM3)

Two of the managers whilst being happy with the approach that had been taken to the implementation of Peer Support felt that the programme should have been bigger:

“I think one of the things I like about the way SI, and now Peer Support, have developed is that it has responded to the situations. So, one approach has worked well in some areas and not well in others and new approaches are impacting on the areas where it has not worked well before . . . I think it is a bit of an experimental process. There’s a body of work, based on both our own experience and what other people do that means we know there’s value in doing it but it’s still experimental in terms of you looking for the right model in the right place at the right time and so on. I think the implementation’s been good from that point of view . . . I have a sense it should be much bigger than it is I but I don’t know what stops that happening” (IM2)

“It was a new concept introduced fairly cautiously on the basis of tutors coming forward, wanting it and their managers encouraging it. So, I think it was fairly small scale in it’s pilot and it’s kind of grown straight line graph, very steadily over the years and it’s expanded into different forms of Peer Support . . . I would say it’s a fairly conservative, with a small ‘c’, introduction and I would welcome a wholesale introduction.” (IM1)
The other manager was not so happy with the approach. This manager felt that the development from SI to Peer Support had taken place too early and that SI should have been made obligatory on certain courses:

"We've tried to go more and more for customisation according to type of course and type of student, which probably takes it a little bit away from its origins, a little bit away from what it was supposed to be, what it was presented as being in America... I would prefer it implemented in its pure form, in its original form, in its support of achievement and attainment on hard to pass courses because I think that it does have benefits, I just don't think we've ever forced it as model and we moved into customisation too soon... I'm of the opinion that I think it should have been mandatory for all courses that were at risk because a lot of students were not achieving... I think that if you look up and down most of the college systems wherever people have the opt out clause they opt out. I think it would have served Peer Support and the students on those courses better had it been obligatory." (IM4).

The managers were split down the same lines as they were when commenting on the implementation of Peer Support, when it came to the future implementation of Peer Support. The manager who has happy with the implementation strategy saw it growing in the same way.

"What we've seen in its development from SI into the programme of Peer Support, it will go on growing. It's about where learners will take it. There isn't a set model, a set recipe. There are ingredients which can be mixed together in different ways by different learners and that's the thing to keep hold of." (IM3)

The managers who felt Peer Support should be bigger felt that it should have a role across the college. One of these managers felt that it should be a student entitlement to have access to Peer Support, although this might be provided outside their course if teachers did not want it on their course. The other felt that it should be implemented on all courses:

"It would be good if it was available to everyone who was learning in the college. That some form of Peer Support was available if you were a student in the college... I think the whole thing has so far been done on a voluntary basis, that it's only done if the tutor's are buying into the scheme. And that seems in my mind to be a weakness but it may be something you can't get around. I thought in theory a student should be able to get Peer Support, in some form, whether or not their tutor agrees with it (and) presumably there are other schemes that you can operate separately from the
tutor's kind of input. . . Maybe we’re really getting to the point where you could look at the college as a whole and start to put forward the kind of part Peer Support could play in the college in the broader sense. Whether it was part of our charter, saying that all students would have access to Peer Support programmes or schemes or whatever, or whether you might even decide that’s not appropriate and think it should be targeted at certain types of groups. I think we need to start to clarify where it is of value and start to say ‘This is what we do, we know it’s of value and we will support and provide it in this way.’ To move it on a notch from something which is kind of not actually incremental in growth because it’s grown in different ways, but it’s voluntary, it’s based on enthusiasm and interest, rather than it being part of the college strategy and I would think we were getting to the point where we could start specifying it more in terms of how it should fit in terms of the college overall operation and that would help all round actually.” (IM2)

“What we’ve relied on in the past is the lecturers coming forward to say they are interested. Basically we need now to get it part of every full time group and many part-time groups. Get it on the timetable immediately . . . It might be the pure SI model or it might be more group support, study help. I’m using it in its widest context really. Just students together in an organised way helping each other study. I’d expand it dramatically.” (IM1)

The other manager felt that it should be made obligatory on targeted courses, those which were assessed by end of course exams and where the achievement rates were low.

“(I) think it should be obligatory on ‘A’ level programmes, and lets say GNVQ, certainly GNVQ advanced programmes, and on courses like the AAT which are again about hard to pass exams and maybe some of the EFL courses. That would be my starting point to go to those really badly achieving courses with external end tests that is the problem and say OK how do we address that and make use of Peer Support.” (IM4)

The managers had differing views on the Peer Support approach to the implementation of peer learning across the college. One felt the approach was working well, two valued the approach but felt it should cover more students, and one felt that there should be a return to the SI, with some courses being told to run the scheme.
4.6.4 Reflection: The two strategies evaluated using the criterion and the future development of the strategy - June 1998 - April 1999

My reflection on the Peer Support implementation strategy is based on my criterion for the implementation of cross-college peer learning schemes that I developed in my literature review. This will also represent the evaluation of the strategy from my perspective as peer learning co-ordinator. The criterion follows Lewin’s (1952) three steps of change, with points 1. and 2. dealing with unfreezing, 3. with changing, and 4. with refreezing. The criterion was as follows:

1. Those who are seeking to implement peer learning schemes across an institution need to put them in the context of current conflicts in the system; that is they need to be presented as the answer to problems that have already been identified in the system. This will give the person leading the implementation support from those above. This can help to provide pressure with which to promote the implementation of peer learning. However, it needs to be recognised that if peer learning is presented as a potential solution to these conflicts, this will shape its aims and in turn the form of peer learning that is used.

2. Those affected by the introduction of peer learning need to be involved in its implementation, as do those who are not affected but are in a position to block or encourage the development of peer learning. These two groups do not only need to be consulted, but their ideas and experiences need to be used to change the approach to peer learning so that it fits with the environment in which it is to be introduced. This provides those involved in the implementation of peer learning with incentives to participate in the individual peer learning schemes.

3. Those who are leading the implementation need to recognise that it will take time for peer learning schemes to be implemented and to work effectively. Those involved in the implementation need to have the confidence to make any changes that become necessary to increase the chances of the schemes achieving their objectives during the implementation. Any model of peer learning that is used is only a guide and it should not act as a bar to making individual peer learning schemes fit within the particular environment in which they are implemented.
4. Planning needs to begin early for the embedding of the peer learning schemes within the institution. If the peer learning schemes are not embedded in the institution, then they will be open to changes in priorities in that institution and may disappear when those involved in introducing them move on within, or leave, the institution. The approach to peer learning needs to be continually reviewed so that its fit within the organisation is maintained.

1. **Putting SI and Peer Support into the context of current conflicts in the system.**

   When considering whether an innovation is seen as a solution to current conflicts in the system, it is important to realise that different groups of actors might have different perceptions of the innovation.

   SI was viewed as an answer to existing problems. However, as I have shown, it was a management answer to a management question and as such was a top-down initiative. Teachers did not see the need for it and in fact may have seen it as representative of a series of changes they were trying to resist. The students who were offered support did not see it as addressing their needs and did not attend the sessions, and so obviously did not see it as resolving their conflicts. SI leaders seemed to gain from their involvement in the schemes, but suggested that the SI approach prevented them from supporting as many students as they might have under an alternative approach.

   With Peer Support I adopted a bottom-up approach by deliberately presenting the strategy differently to managers and teachers. To managers it was presented as a tool to aid retention and achievement. To teachers it was presented as a tool that they could shape to support their courses. These two presentations are linked, and indeed some of the teachers did think that Peer Support had improved the performance of students on their courses. However, they involved different emphases and not all schemes that teachers developed would have a direct effect on retention. In this way, whilst SI was imposed by management, Peer Support was a strategy that was imposed on management.
The problem with this dual approach was shown in the manager perception of the future of Peer Support in the college. They felt that Peer Support should be spread wider across the college and if Peer Support is to be cross-college they are right. The issue is about how to do this. If Peer Support was made obligatory the aspects that teachers valued would be lost, and teachers might then reject Peer Support in the way they did SI. If new schemes are still reliant on teachers requesting them, then the expansion management require is unlikely to occur. A possible solution to this is to expand into schemes that take place outside of courses on the model of Peer Support that has been developed at Wellington Polytechnic (undated). These schemes are run by the Peer Support Co-ordinator, who matches the skills of the PSers with the needs of the students who are seeking supporting. These schemes do not require teacher involvement to run. This would potentially increase the number of students involved in Peer Support, whilst also allowing those teachers who are interested in the approach to develop their own schemes on their courses.

2. Involving those affected by the introduction of SI and Peer Support

Those affected by the introduction of SI, the teachers and the students, were not involved in its implementation. They were not consulted and their ideas and experiences were not used to shape the scheme to fit with the college environment. Instead the model was designed outside of the college and implemented in the way that was presented in the literature on SI. Many teachers and students did not participate in SI and this seemed to be because, as they did not see the scheme as relevant to them, they had no incentive to become involved.

Those affected by the introduction of Peer Support were involved in designing the schemes and shaping them to their course. Teachers had the option of designing their own schemes based on the series of options. PSers' own models of how to run a peer support sessions were used as a starting point for how their sessions would be run. This approach was successful with the number of schemes, and the student take up of the schemes, increasing. The evidence certainly suggests that Peer Support schemes are more relevant to the students they support, than the SI schemes were. Sometimes there were very little differences between the way the schemes were eventually
structured, however the process by which they were structured were very different (see Section 5.3.4 for further details of these differences). It is this process of building the scheme that is the important difference with SI. It allows the involvement of the participants in the scheme and allows for the development of schemes that are felt to be tailored to the courses or services they support.

However, the small number of courses involved in Peer Support, compared to the number running in the college, suggests that being able to shape a scheme is insufficient incentive for most teachers to become involved in them. Students, however, do seem to want to become involved in schemes that support their learning, and the benefits they receive seem to act as an incentive for their involvement. This again suggests that Peer Support structures could be moved outside of courses to increase the provision that is offered across the college.

3. Developing the Schemes in response to their shortcomings

SI was not changed in response to its shortcomings. The feedback from students, SI leaders and teachers about its lack of relevance was viewed, at first, as being due to their lack of understanding of the scheme and what it was trying to achieve. The schemes were implemented by the SI co-ordinator acting alone using a single model for the schemes, and this made changing the schemes very difficult.

Peer Support schemes were changed in response to their shortcomings. The schemes were implemented by the teachers and PSers acting with the Peer Support co-ordinator. The designing of a Peer Support scheme was recognised as a developmental process. Schemes were changed at the end and during the year. Teacher and student feedback were automatically used to alter the scheme because it was they who were partly responsible for designing the scheme. This led to an increase in the success rate of the schemes that are operated under the Peer Support implementation strategy.

4. Embedding SI and Peer Support

SI was embedded in the institution in terms of the college providing a post to implement the scheme. This post became permanent in September 1996. However, it
was not embedded onto courses. The schemes that used SI changed from year to year, and in only one case did SI remain on a course throughout the time that it was being used as the model of implementation for peer learning.

Peer Support is embedded in the institution in terms of the college providing a post to implement the scheme. However, the managers' visions for its future shows that it is seen as a vehicle for delivering outcomes. If these outcomes are not delivered then Peer Support will cease to be supported.

Peer Support is still not embedded on courses. Only half of the courses that ran Peer Support in 1996-7, had a scheme in 1997-8. Two possibilities present themselves. The first is to accept that it is part of innovations such as Peer Support that they are temporary. Peer learning should be something that all teachers use as a matter of course and so separate schemes are only necessary when these are not built into the course. The second possibility is to develop Peer Support schemes that are parallel to the course, and so do not need teacher support to run. If these separate schemes can then be embedded it would still allow for support to be offered to those teachers who do want to develop their own Peer Support schemes.

5. Further developing the implementation strategy
I have shown that the Peer Support implementation strategy was more successful than the SI implementation strategy. However, whilst the implementation has been more successful it had not reached the stage where the implementation can be considered fully cross-college or where Peer Support could be said to be embedded in the college. To achieve both these aims the strategy needs to be developed. What appears to offer the best way forward is the establishment of Peer Support schemes that operate outside of the curriculum areas. These could be used to offer the breadth, and numbers of schemes, as well of the levels of student involvement, that the college managers require, whilst using the existing Peer Support strategy to offer teachers the flexibility they value in designing Peer Support schemes that will fit with their courses. Most importantly it will increase the number of students who can benefit
from Peer Support. It can benefit those students who are given support from their peers, and those who give support to their peers by acting as PSers.

### 4.7 Conclusions

The evidence presented in this chapter shows that the alternative Peer Support implementation strategy was more effective than the initial SI approach to the implementation of peer learning schemes in the college. It was more effective when it was examined from the perspective of managers, teachers, peer facilitators and students offered peer learning, and my perspective as the co-ordinator of peer learning in the college.

In this section I examine three issues. First, I examine my approach to analysing data. In particular I focus on my analysing of textual data. I show how extracts from the textual data were selected to avoid using extracts that, rather than exemplifying themes in the data, were convenient to my argument about how the approach to implementing peer learning was developed.

Second, I explain the way in which I interpreted my data within an action research approach to evaluating the implementation of peer learning. Using an action research approach involved a change in my understanding of peer learning and my practice in implementing peer learning. Thus, it could be argued that it is not clear how much the outcomes presented in this chapter are due to changes in my approach to implementing peer learning and how much to my changing understanding of peer learning. However, I show that such is the case in all approaches to implementing educational innovations. I also show how the data presented in this chapter shows there were clear changes in approach to implementing peer learning.

Finally, I show that my findings in this chapter have several implications for implementing, and researching the implementation of peer learning. I have found that the implementation of peer learning needs fit with the context in which it operates. This finding has implications for the role of the peer learning co-ordinator. It
highlights the importance in this role of involving others in the implementation of peer learning, and of translating and negotiating between the peer learning models of different participants in this process. I conclude by recommending that the approach to implementing and researching the implementation of peer learning has been successful enough to warrant being used in other institutions. This would overcome the criticism that this approach has been developed and tested in a single organisation.

4.7.1 Analysis of data

The data I have analysed has been in two forms. First, the quantitative data from my analysis of the number of schemes, students attending, and responses to the questionnaires to peer facilitators, students offered peer learning and teachers. The analysis of this data was comparatively straightforward. Second, there was the qualitative data from the SI support meetings, PSer Journals, the interview with the PSers and the IMs. This data was in a textual form.

As I explained in my Research Design (see Section 3.5.2) I have extracted quotations from various types of textual data. These quotations were selected on the basis of exemplifying themes I had identified in the whole of the particular source of data. However, it could be argued that the identification of these themes involved a rationalisation of changes in the implementation of peer learning after the changes had taken place. This would imply that themes were selected that were convenient to producing a coherent picture of the development of the implementation of peer learning rather than reflecting real changes in the implementation of peer learning.

There are two responses to this. First, all research involves the identification of themes that change over the time that the research is conducted. Part of the researcher’s task is to tell a coherent story that relates the data that is presented rather than simple the presenting all of the data. Thus to some extent rationalisation in the writing up process is inevitable because as, Lomax and Parker (1995) argue, all researchers must make decisions about how to represent their research. Thus, the
writing up of this chapter does reflect my changed understanding of the implementation of peer learning.

Second, I have used my extracts from my Progress reports to my PhD Supervisor to guard against the mis-identification of changes in this process. In using extracts from my progress reports I have shown the way that I was thinking about peer learning at the time I was implementing it (see Section 1.3.2 for a fuller examination of how my understanding of peer learning has changed over time). This process could have been improved by using an independent researcher to check on my identification of themes but, as I showed in Section 3.5.2, there were not the resources to allow for this.

I have shown the analysis of data in this chapter was sound. The analysis of the quantitative data was straightforward. In analysing the textual data I employed several techniques to prevent the selection of extracts that were convenient to the argument presented in this chapter.

4.7.2 Interpretation of data

Using an action research approach to analysing and interpreting data raises the question of how much the changes demonstrated by this data were due to my change in understanding of peer learning and how much to the change in my practice in implementing peer learning. These two changes are clearly linked but I show that the way I have analysed my data shows that the outcomes in this chapter are largely due to the changes in my implementation strategy.

The data I analysed was drawn from the different stages of the action research cycle that I went through in developing the implementation of peer learning. This approach linked my practice and research in a mutually developing process; as my understanding of my practice developed, so the data I collected changed and as I examined this data so my understanding of my practice developed. This meant that the analysis of data did not involve a clear comparison between the two implementation strategies. This raises the question of how much the differences in the
outcomes of the two implementation strategies were due to the differences between the two strategies and how much to my changed understanding of the implementation of peer learning. If it was due largely to changes in my understanding of peer learning then it is possible that the SI implementation would have given the same results as the Peer Support implementation strategy.

There are several responses to this. First, it is very difficult to separate changes in my understanding of peer learning and changes in my implementation strategy. My changed understanding led to changes in implementation strategy. All implementation strategies are altered by the implementers’ understandings of their environment and their innovation. In adopting an action research approach to the implementation of peer learning I have attempted to make this process explicit rather than separating the research and development of the implementation strategy. Second, the interviews with the IMs involved these managers in reflecting of how they understood the implementation of peer learning to have developed. Whilst they did not all agree with the changes they did all appear to understand the changes in the implementation in the way they are presented in this chapter. Finally, some of the changes that have been shown in this chapter would have not been possible under the SI implementation strategy. For example, under the SI implementation strategy a single peer learning scheme was used and so it was not possible for students and staff to design their own peer learning schemes.

I have shown that, whilst the action research approach does involve changes in both understanding and action, in this chapter I have demonstrated real changes in the approach taken the implementation of peer learning.

4.7.3 Conclusions and recommendations

To conclude this chapter I first emphasise the differences in the two approaches taken to the implementation of peer learning. I show that the importance of integrating the implementation of peer learning into the context in which it will operates leads to a more complex view of the role of the implementer of peer learning. Finally, I
recommend that the approach taken to the implementation of peer learning, as set out in the criterion for implementing peer learning, be used and developed further in other educational institutions.

The Peer Support implementation strategy was more effective than the SI strategy for implementing peer learning. The main differences in the approaches can be characterised in three ways. First, whilst SI was designed outside of the college, Peer Support schemes were designed in the college by the teachers and PSers involved in running the schemes. Second, whilst SI was imposed by management, in the sense that they decided on the model that would be used, Peer Support was imposed on management, in the sense that it was the models of teachers and PSers that were used. Finally, whereas SI was implemented by an SI Co-ordinator acting largely in isolation, Peer Support was implemented by a co-ordinator acting with teachers and PSers.

In this chapter I have found that peer learning needs to be implemented so that it fits with the context in which it is to operate. This highlights the importance of involving those who will be affected by, and those who can effect, the implementation of peer learning so that they can shape it to fit with their context. However, not all of those involved in peer learning are interested in the same issues and so peer learning needs to be represented in different ways to different groups. The students who are offered peer learning are likely to be interested in an approach that will help them on their course, the peer facilitators in an approach in which they can help others whilst developing themselves. Teachers value an approach that supports their students whilst causing them the minimum of additional work. Managers are interested in an approach that will maximise retention and achievement for minimal cost.

These findings suggest that the role of the implementer of peer learning across an institution goes beyond the simple implementation and evaluation of schemes. Rather they need to act as facilitators who help those within their organisation to frame their own approaches to peer learning. They have to act as translators who convert the
schemes of students and teachers into the language of management, and vice-versa. They may also need to act as negotiators between the different participants’ views of the most appropriate form of peer learning.

However, in this chapter I have only considered the implementation of peer learning within a single organisation. This means that it is not clear how generalisable my findings and recommendations about the implementation of peer learning will be to other institutions. This is because this strategy, although informed by the literature on organisational change, grew out my experience within a particular situation. This probably led to issues in the implementation of peer learning that were pertinent to my situation being emphasised at the expense of others that would be important in other situations. In order to investigate this issue further there is a need for research into the implementation of peer learning, and perhaps other educational innovations, in other institutions.

To conclude, I have shown that the Peer Support implementation strategy was more effective than SI implementation strategy. This was because the Peer Support implementation strategy involved students and teachers in designing their peer learning schemes. This led to the development of peer learning schemes that fitted in the context in which they operated. In the Peer Support implementation strategy my role as the Peer Support co-ordinator changed to that of a facilitator of others in developing their schemes rather than implementing a single scheme. The approach to implementing peer learning across the college peer learning has been successful and now should be tested to see how applicable it is to other contexts.
5.1 Introduction

5.1.1 Summary of the Chapter's Argument

My purpose in this chapter is to show that peer learning can be an effective way of improving students’ academic performance and supporting students in their learning. However, I also show that peer learning cannot be considered separately from the context in which it operates. The relationship between the students who act as peer facilitators and the students who are facilitated, the academic disciplines that are being studied, and the methods of assessment of those disciplines all affected the running of the scheme. If one of these factors is different, then the form of peer learning that is most appropriate for supporting students may be different. This is because peer learning is a small part of students’ educational experience. It takes place in the wider educational context in which many factors affect the quality of students learning. These can never be fully controlled for in evaluating peer learning, as they affect the implementation of peer learning and are affected by the implementation of peer learning. I conclude that this raises two issues. First, it underlines that, whatever the statistical evidence, any improvement, or decline, in students’ learning cannot be attributed solely to peer learning. Second, it re-emphasises the importance of involving students and teachers in the designing of peer learning schemes, as they will have knowledge of these factors. As I showed in Chapter Three, their involvement in developing peer learning schemes increases the likelihood of these schemes being used and valued by students. If students are prepared to use peer learning, then this is a good indication that the peer learning schemes are effective in supporting students’ learning.
5.1.2 The Structure of the Chapter

In this chapter I examine the two peer learning schemes in the form of Peer Support (PS) on ‘A’ level Science at Newham College of Further Education. These are PS for first year ‘A’ level Science students (PS for Y1s) and PS for second year ‘A’ level Science students (PS for Y2s). In this case study I wish to show how the implementation strategy works on two PS schemes. The two PS schemes on ‘A’ level Science were selected because they, in different ways, were well established. This means that in the case study I examined schemes that had been developed over a number of years rather than examining schemes that were going through their development.

After I set out the research questions that have been considered, I describe the structure of the ‘A’ level science course. I give a brief description of each of the schemes as they were planned and as they developed on the first (Y1) and second year (Y2) of ‘A’ level Science. I show that there were initially two schemes on PS for Y1s. Despite the structures of the schemes being the same, and the Peer Supporters (PSers) having the same training, one scheme was successful in terms of student take-up and the other was not. I examine possible reasons for this, and conclude that it shows how PS was affected by the context in which it operates.

I show that despite PS for Y1s and PS for Y2s having similar structures, they did not appeal to the same kinds of students. On PS for Y2, students with higher academic achievement attended the sessions. I conclude that the difference in the types of students using these two schemes was due to the different types of PSers who ran the sessions. The PSer on PS for Y2s was perceived as more of an expert by the PSUs and this led to more able students using the sessions to prepare themselves for their exams. This highlights how the students involved in a scheme affect the outcomes of that scheme. I demonstrate the effect of the assessment methods by showing how over time students’ approaches to studying became less meaning and more reproducing orientated. I develop this issue in Chapter 6.
I show that on both schemes the students who used PS felt that it had supported them in their learning. The PSers' account supported this view, and I demonstrate that the statistical evidence supported this. The PSUs performed better than non-PSUs in their end of year exams, and there were significant correlations between attendance at PS and performance in the end of year exams. There were also significant correlations between attendance at PS, and performance in the end of year exams when previous academic performance was controlled for. Considering all of this evidence I conclude that PS was effective in supporting students learning.

In this case study I have used methodological triangulation (see Section 2.5.2) to investigate Peer Support. I have used a number of different types of data to build up a picture of the operation and outcomes of Peer Support on 'A' level Science. I have used quantitative data on the Y1s' and Y2s' approaches to studying, their previous academic performance and their performance in their end of year examinations. I have used qualitative data from the PSUs, PSers and my observations of the sessions on the process and outcomes of the PS schemes. This was important because the quantitative evidence on its own was inconclusive because PS both affected, and was effected by, the context in which it operated. This means that it is not possible to isolate PS from all the factors that affected students' learning. For example, one factor that could not be controlled for was the effect of students' motivation to succeed academically on their attendance at PS. The approach here was to triangulate a variety of types of data to build up a fuller picture of PS on 'A' level Science.

I conclude that PS, an example of peer learning, was successful in supporting students in their learning but this success is dependent on the context in which peer learning is situated, and the extent to which peer learning fits this context. I isolate some of the factors that make up this context. Considering these findings I make recommendations about the future research approaches to peer learning as well as the development of peer learning schemes.
5.2 Research Questions

This case study examines the two PS schemes on ‘A’ level Science. Rather than simply focusing on outcomes of the schemes, I examined the context in which the schemes operated. I used both quantitative and qualitative data to examine the research questions.

5.2.1 Research Questions

The research questions I examined were:

1. How did PS operate on ‘A’ level Science?
2. Did students with particular levels of previous academic achievement use PS?
3. Were students with particular approaches to studying more likely to use PS?
4. Did students gain from their involvement in PS?

Question 1. is clearly more general than the other three questions. This is answered in part in the description in Section 5.3, but I return to aspects of this question throughout this chapter. In particular I examine how PS operated in the context in which it was established. The central theme of this chapter is the importance this context has for the process and outcomes of PS.

5.2.2 Approach to answering the research questions

In answering the research questions I triangulated my research methods by using a mixture of qualitative and quantitative data to investigate PS on ‘A’ level Science. The schemes that were investigated were very close to SI schemes of peer learning. This allowed me to draw on some of the elements of the methodology for evaluating SI (see Martin et al 1993). However, I developed the methodology in a way that addressed the criticisms of McCarthy et al (1997). These were that SI evaluation was narrowly focused on the SI schemes, and so failed to take account of the wider context in which SI operated. There was no use of qualitative feedback to support the results from quantitative data. There was no examination of the relationship between the amount of SI and students’ academic performance. Finally, there were too few factors controlled for in examining whether SI had improved students’ academic performance. My research addresses all of these criticisms except the last one. I
argue that if PS is examined in relation to the context in which it operates, then it is impossible to control for all the factors that affect students' learning. Thus, whilst I did examine the relationship between students’ approaches to studying and their use of PS, I did not examine, for example, the relationship between PS and students’ levels of motivation to succeed academically. My approach was to triangulate my research methods, by using qualitative and quantitative data to show that that PS for Y1s and Y2 helped to improve students’ academic achievement. This approach meant that it was not possible to identify the size of the effect that PS had on students’ achievement. However, given that peer learning schemes operate differently in different contexts such a measure would not be meaningful outside of the setting of this particular peer learning scheme.

1. Qualitative Data

The qualitative data is drawn from a number of sources. It is drawn from the journals that the PSers kept on their sessions, the notes I took when observing their sessions, the questionnaires that were completed by the students offered support and the group interview with PSers. The extracts from the PSers journals are representative of the seven PSers involved in that scheme. The summaries of my observations may not be representative of all the sessions because the PSers may have changed the structure of their sessions because of my presence. Thus these are only used to support evidence from other sources. The PSer group interview questions can be found in Appendix IV. The material used in this chapter is drawn from the group discussion and individual responses are from questions 1. to 7. The end of year questionnaire for students who were offered PS can be found in Appendix I. The data used were based on the analysis of all the questionnaires returned from Y1 students.

The vast majority of the qualitative data is drawn from PS for Y1s. This is because the PSer for PS for Y2s was no longer a student the college. This made the gathering of data far more difficult. She did not keep journals and devised her own end of year questionnaire (see Appendix II). This focused on what students gained from the sessions and their experience of the atmosphere in the sessions (See Section 5.3.5 for further details).
I used the qualitative data to answer all the research questions. However, I particularly used it to answer questions 1. and 4. There is very little qualitative data on the types of students who used PS, as it was not appropriate to ask PSers or Y1s about the types of students who attended. I could have asked the teachers about their views of the students who attended. However, students attended PS on the agreement that their teachers would not know who attended. To ask the teachers' views on the students who attended PS would have breached the confidentiality of these students.

2. Quantitative data
I have used the quantitative data to examine whether particular types of students attended PS, and to examine whether students gained from attending PS. I have used two types of statistical tests. I have examined the differences between two groups, PSUs and non-PSUs. I have considered the relationship between the amount of PS students attended and their performances in examinations. I have used non-parametric statistical tests to analyse both types of data. This is because they can be used with ordinal data; they do not rely on assumptions about the distribution of the sample and the general population and are well suited to data that include a small number of observations (Peers 1996). I used the Wilcoxon Mann Whitney Test to analyse the differences between the groups, and Spearman’s rho (rank order correlation coefficient). These tests both examine the rank orderings of data. However, in presenting the Wilcoxon Mann Whitney Test statistics, I give the mean of the two groups, rather than their mean ranks. This is because the mean gives more useful information with which to analyse any differences in the performance of the two groups. I analysed all quantitative data using SPSS v.7.0.

I defined PSUs as those students who attended five or more PS sessions, and non-PSUs as those students who attended less than five PS sessions. When I refer to PSUs, I am referring to students’ who attended more than five PS sessions. When I use the phrase ‘students who attended PS’, I am referring to student who attended one or more sessions. I chose five sessions as the dividing point between PSUs and non-PSUs before I analysed the data. I chose it for three reasons. First, it is the most
commonly used measure in SI evaluations (see McCarthy et al 1997). Second, I chose it because of the time it takes for PSers and PSUs to understand each other's and their own roles in the sessions. Third, I chose it because students who are very motivated to achieve high marks seem likely to attend any support offered to see if it is suitable for them. To include students who attended less than five hours of support may simply pick out those students who are motivated, rather than those who may have benefited from PS.

This is the only attempt I made to control for motivation. I have not sought to categorise students’ levels of motivation. This is a problem because students who are prepared to give up an hour of their time to attend PS are probably motivated by something. However, the approach I have taken is to triangulate research methods to establish whether PS supported students, by using both quantitative and qualitative data. Even if motivation was controlled for, there would still have been other factors that affect students’ learning that would not have been accounted for. Peer learning is a small part of students’ educational experience that is implemented into a particular context and is affected by the context in which it is implemented. Therefore, it is not possible to isolate the percentage effect that PS had on students' achievement. However, qualitative and quantitative data was used to build a case that showed whether or not students’ valued PS and whether those who used PS performed better academically than those who did not.

5.3 How did Peer Support operate on ‘A’ level Science?

In this section I describe the structure of the ‘A’ level Science course, and the history of peer learning on ‘A’ level Science. I show how it was developed from SI in a manner that was representative of the way the college-wide SI implementation strategy was developed in to Peer Support implementation.

In summarising the approach to PS for Y1s, I show that there were two schemes initially set up. I describe the schemes and show how the development of these schemes differed from the SI approach. I demonstrate that one PS scheme was
successful in terms of student attendance and the other was not. I examine possible reasons for the success of one and the failure of the other. I conclude that the different outcomes of these schemes show how the schemes are rooted in the context in which they are established. Each year as new students use the schemes, they may need to be altered to fit with this new context.

Finally, I describe PS for Y2s. This was run by a student who had progressed to university from the college. I examine the possible affect that the distance in the ‘peer’ relationship may have had on the scheme. I show in Section 5.4, that it may have resulted in students with higher levels of previous achievement attending PS. This demonstrates how changes in the make up of peer learning, can effect which students are interested in it.

5.3.1 A description of the course

The PS schemes I will consider in this case study operated from October 1997 to May 1998. In 1997-8 ‘A’ level Science had 95 students in the second year and 108 students in the first year of the course. Students usually study three ‘A’ levels. They have a choice of subjects from two groups of subjects. The first group is Chemistry, Biology, Pure Mathematics and Statistics, or Statistics. The second group is Chemistry, Physics, Pure and Applied Mathematics, and Computing. They can choose one ‘A’ level from the ‘A’ level Humanities department. Students can study four ‘A’ levels but the college makes no provision for students to study a single ‘A’ level. Students’ progression from Y1 to Y2 is dependent on their performance in the ‘promotional examinations’ that are taken at the end of Y1.

The department has changed in a way that is consistent with the general changes in the college outlined in Section 4.5.1. For example, at the end of 1996-7 two of the longest serving full-time members of the department took early retirement and the college did not replace their posts. Their workload was covered by an increase in teaching hours for existing staff, and the use of temporary staff.
5.3.2 The history of the peer learning on ‘A’ level Science

Peer learning has run on A level Science since SI was introduced into the college in September 1993.

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<tbody>
<tr>
<td><strong>No of sessions run</strong></td>
<td>29</td>
<td>46</td>
<td>33</td>
<td>18</td>
<td>39</td>
</tr>
<tr>
<td><strong>Hours of SI/PS students received</strong></td>
<td>157</td>
<td>446</td>
<td>340</td>
<td>49</td>
<td>76</td>
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<tr>
<td><strong>Average Attendance</strong></td>
<td>5.4</td>
<td>9.7</td>
<td>10.3</td>
<td>2.7</td>
<td>1.9</td>
</tr>
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<td><strong>Students attending ≥ 1 sessions</strong></td>
<td>28</td>
<td>50</td>
<td>64</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td><strong>Regular users (attending ≥ 3 sessions)</strong></td>
<td>19</td>
<td>36</td>
<td>32</td>
<td>9</td>
<td>13</td>
</tr>
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Table 5.1: Take up of peer learning on ‘A’ Level Science 1993-1998

Table 5.1 shows how SI, and then PS, developed on ‘A’ level Science in terms of student take-up of the support that was offered. The development of the scheme over time mirrors the increase in the student take-up of peer learning schemes across the college that I demonstrated in Section 4.6.3. In 1996-7, when the Peer Support approach to implementation replaced the SI approach, there was a huge increase in the take up of the sessions. In 1997-8, the increase was in the regular attender rate, which increased from 50% to 72%. In 1997-8, the PS provision was expanded to offer PS to second Y2s.

5.3.3 PS on ‘A’ level Science 1997-8

Two PS schemes were set up on ‘A’ level Science in 1997-8. They were both strongly based on the SI model of peer learning. The PS sessions took place outside the mainstream curriculum with the PSUs attendance at the sessions being voluntary. The role of the PSers was to facilitate discussion of the course material between the PSUs rather than lecturing to them. The PSUs’ role was therefore to take an active part in providing the material for the session, whilst the PSers were responsible for giving the discussion structure.
The link teacher on ‘A’ level Science requested PS on Y1 in June 1997. He agreed to select seven students from the second year to act as PSers for the first years in September 1997 and to organise to timetable slot for them to run their weekly sessions. We agreed that I would train the PSers and organise their ongoing support.

The second scheme, PS for Y2, was set up in agreement with the link teacher but not at his request. This was the first time a PS scheme had been established for Y2s. The reason I considered the scheme fully developed was because the PSer who ran the sessions had acted as an SI leader whilst a Y2 student in 1994-5. She had continued as an SI leader and PSer supporting the Y1s for the next two academic years. The PSer, who since 1996-7 had been studying medicine at Queen Mary and Westfield College, offered to run PS sessions for Y2s studying ‘A’ levels in Biology and Chemistry. She also agreed to run the ongoing support sessions for the PSers who were running sessions for the Y1s.

5.3.4 PS for Y1

I trained seven PSers in October 1997. The training lasted for three hours and I delivered the training with the PSer for the Y2s. The students were introduced to, and discussed, their role as PSers. They each ran a practice PS session and discussed how they would run their first sessions. They worked with their own models of how they would run their sessions; the idea was that we would develop these over time. We then planned their first session and agreed how they would market the sessions to the first years.

The PSers split into two groups. Five of them teamed together to offer sessions on Chemistry, Biology, Pure Mathematics, and Statistics. Two of them offered sessions on Physics, Pure and Applied Mathematics and Computing. Finally, we agreed they would meet the PSer for Y2s and I once a week for their ongoing support. In terms of student attendance PS on Chemistry, Biology, Statistics, and Pure Mathematics and Statistics was successful, whilst PS on Physics, Pure and Applied Mathematics and Computing was not.
1. PS for Chemistry, Biology, Pure Mathematics and Statistics

Five PSers teamed together to offer PS for students studying Chemistry, Biology, Pure Mathematics, and Statistics. In terms of student attendance, these sessions were very successful. The PSers ran 34 session; 44 students attended at least one session, 24 of these attended at least five times, and 19 attended at least ten times. In terms of attendance per subject, 19 of the 47 students studying Chemistry attended at least five times, and 16 of the 25 students studying Pure and Mathematics and Statistics attended at least five times. The average attendance at the sessions was 19.8 students. This is very high for PS schemes within the college in which students' attendance is voluntary, that is, where PS takes place outside the mainstream curriculum.

2. Reasons for the success of PS for Chemistry, Biology, Pure Mathematics and Statistics

I show that the reasons for the success of PS for Chemistry, Biology, Pure Mathematics and Statistics were the clear structure of the sessions, and the manner in which the PSers' and PSUs' understanding of the sessions developed together.

I observed three of the PS sessions for the Y1s over the academic year. I observed one session in November 1997, one session in February 1998, and one session in May 1998. In these sessions the PSers split the large group into smaller groups of PSUs who were interested in discussing the same topics. The students would attempt a series of exam questions on these topics that the PSers had prepared.

The PSers’ and PSUs’ understanding of their roles appeared to change over the three sessions that I observed. The changes in the sessions were in terms of the interaction between the PSers and the PSUs. In the first session I observed the students were reluctant to talk and when they did they addressed all their comments to the PSers. In the later sessions the students would discuss the questions with each other once the PSers had initiated the discussion. It seems that over time the PSers and PSUs began to understand their own and each other’s roles.
Examples of how two of the PSers journals changed over time will demonstrate the 
PSers’ perception of the PSUs’ participation in the sessions changed over time (see 
Section 3.3.4 for a description of the PSers journals and Appendix V for an outline of 
their journals). These are representative of the journals kept by the five PSers.

After the second session, on the 16th October 1997, in their first journal entry the 
two PSers said they wanted to improve the following:

“Getting everyone to participate and co-operate.” (Shaminder, Session 1 
Journal, 16/10/99)
“Trying to get them to listen to each other and co-operate instead of talking 
all at once. Try to get the quieter students more involved somehow. They sit 
and watch but don’t take part. I think they’re unsure of the answers and don’t 
want to be wrong.” (Nazia, Session 1 Journal, 16/10/99)

The PSers appeared in their journals to overcome this problem relatively quickly. 
This was illustrated by the entries in the ‘What did you do well?’ section of their 
journals:

“Got everyone to participate, even the quiet ones. Also got the louder, more 
confident students to show respect to students who did not understand first 
time round.” (Shaminder, Session 5 Journal, 13/11/97)

“They also learnt about working together as they took it in turns to answer 
questions. I think that this was the best session I had so far, as usually I have 
to keep asking questions and lead discussion but today they were working 
and talking amongst themselves. This helped them to get the answer. I also 
made them take turns in answering questions, so they all participated. I was 
quite impressed with them today.” (Nazia, Session 7 Journal, 27/11/97).

In their group interview (see Section 3.3.4, for details of the interview procedure and 
its participants and Appendix IV for the questions), the PSers confirmed the way in 
which their and the PSUs’ understandings of the sessions developed over time. 
However, in this interview they suggested that it took longer than they implied in 
their journals.

Nazia and Shaminder outlined in the group interview how the PSUs initially came 
looking for answers, and the PSers responded by talking for most of the sessions:

147
"Nazia: We were so desperate for them to come at the beginning we would do anything they wanted . . . I thought we were teaching them a lot more in the beginning. If they didn’t understand something in the class they wouldn’t ask (the teachers) for help, they would come to us. They were like ‘oh we can go and ask them.’ So in the beginning we used to talk continuously for an hour and it was really tiring.

Shaminder: They thought the whole point of this PS was for us to teach.”

The PSers explained how they developed the sessions to be more interactive, and how the PSUs began to understand that the PSers were not teachers:

"Nazia: I think after Christmas we said that we’re not going to do that anymore. You have to at least try and read it up yourself rather than coming straight to us . . . We asked them to explain it to the others, rather than us explaining it to them

Lukman: Some of them understood it more than others and they wanted to just go on and (in the later sessions) they realised they just couldn’t go on at their own speed, that they had to be more tolerant of others.

Shaminder: We were always asking the not so confident person to talk and said ‘hold on there’ to the others, ‘we know you know it so slow down and give the others a chance’.

Ola: I think they got to understand what a Peer Support leader was. They didn’t understand it as first. I think they got to understand that we are not teachers we are just second year students and that we could only help them to a limit. Because they were more use to the course itself, they were more aware of what was going on. They were not expecting us to tell them everything. They went back to read because they had tests and everything as well. They just came for problems and to discuss them. So they understood what was going on.”

The end of year feedback from the PSUs supports the view that the PSUs held about PS after they had attended PS for a while. Table 5.2 shows their responses to the question of why they attended PS in the end of year questionnaire.
<table>
<thead>
<tr>
<th>Why did you attend PS?</th>
<th>%</th>
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<tbody>
<tr>
<td>To clarify difficult ideas</td>
<td>62%</td>
</tr>
<tr>
<td>To improve my grades</td>
<td>29%</td>
</tr>
<tr>
<td>To get help with revision</td>
<td>33%</td>
</tr>
<tr>
<td>To get help with homework</td>
<td>19%</td>
</tr>
</tbody>
</table>

Table 5.2: 1st Year ‘A’ level Science PSUs responded to the question ‘Why did you attend PS?’

As these questionnaires were completed at the end of the year, they offer a reflection of what the students got out of the sessions rather than their initial reasons for attending. The majority of students who used PS attended to clarify difficult ideas. This response implies that they saw themselves as active participants in the group, as it is they who did the clarifying. The most passive response is, ‘To get help with homework’. This response involves another party doing the helping. Less than a fifth of the students who used PS said they attended for this reason. This then provides evidence that the students shared the PSers’ understanding of their own and each other’s roles.

The success of these sessions seemed to be due to the PSers ability to give them a clear structure, as well as the way in which the PSers and PSUs developed their understanding of the sessions together. There was another factor that was not shown by the evidence presented here but was evident to me when I worked with the PSers. This was the strong and supportive group identity that the PSers on Chemistry, Biology, Pure Mathematics and Statistics developed. It is not clear the extent to which this group identity was developed because of the success of the sessions or the extent to which it contributed to the success of the sessions. It is likely that both were true, with the group identity helping the sessions to be a success, and developing because of the success of the sessions.

3. Lessons from PS for Chemistry, Biology, Pure Mathematics and Statistics
The PSers and the PSUs developed an understanding of their roles together. They both started out with an understanding of the sessions that involved the PSers taking the lead and doing most of the work in the sessions. This developed over time so that
the PSUs gradually took more responsibility for the activity in the sessions. The end of year feedback from the PSUs shows that by this time they saw their role as quite active.

It was important that the PSers and PSUs developed their understanding of the structure of the sessions at the same time. If the PSers had tried to run the early sessions in the way that they ran the later sessions, as was the case under SI, then it is unlikely that the PSUs would have attended. This is because the PSUs attended the early sessions looking for answers. If they had not got some answers they would have felt that the time they had spent at the sessions had been wasted. Also, at the start of the PS sessions the PSers felt that giving PSUs answers was the best way to help them. If I had directed the PSers not to give answers, they would not have understood why. This would have meant that they would not have been very convincing in their role and the PSUs would not have been getting the help they felt they needed. This could have led to the low levels of attendance experienced under SI. However, later in the year, when the PSers began to understand that giving PSUs answers was not the best way to support them, they had the confidence to change their sessions. By this time the PSUs had confidence in their ability to structure sessions. In this way it was possible for the sessions to become more interactive.

It is this developmental view of the PSers’ and PSUs’ understanding of their and each other’s role, that is one of the key differences between the Peer Support and SI implementation strategies. The later sessions run on PS for Y1s were very close to the type of session promoted under the SI implementation strategy. However, the processes used to reach this point were very different. Under SI, the two-day training is designed to equip SI leaders to run these sessions. Under Peer Support it is largely experience and the on-going support that PSers receive which enables them to take up their role.

4. PS for Chemistry, Physics, Pure and Applied Mathematics, and Computing
Two PSers ran sessions for students studying Chemistry, Physics, Pure and Applied Mathematics and Computing. They ran 12 sessions; 6 students attended at least one
of these sessions, 3 three attended at least five times and 2 attended at least ten times. The group of two PSers decided to end their sessions in February 1998 due to a lack of attendance from the first year students. In terms of student attendance this scheme cannot be viewed as a success.

5. The reasons for the lack of success of PS for Chemistry, Physics, Pure and Applied Mathematics, and Computing

The reasons for the lack of success, in terms of student attendance, of these sessions are not clear. However, it appears that the sessions were not clearly structured, and that the PSers were not confident in their role as leaders of the sessions. However, the PSers and I could have altered the structure of the sessions to help the PSers to develop their confidence. The failure to do this represents a lost opportunity to offer students support.

My observations of the PS sessions showed that they were not clearly structured. One of the PSers used to work one to one with students, providing them with solutions to their questions, whilst the other chatted to the students who attended about subjects unrelated to their academic studies. It appeared from this that the PSers were not really confident in their roles as leaders of a group session. Instead they interacted 1:1 with students and this gave the sessions a lack of focus and structure. The attendance at the first four sessions was high, but fell rapidly. There was clearly initial interest from potential PSUs, but the lack of clear direction for the sessions probably led the PSUs to feel that they were not useful.

This impression was supported by the PSers’ journals. The student who simply chatted did not complete any journal entries. The reason I allowed her to continue with PS was that experience had shown that, when two PSers work in a pair, to stop one of them from being a PSer tends to de-motivate their partner. As this student appeared to be doing no harm, I allowed her to continue. The other PSer clearly felt that she was running the sessions to give students one to one tuition by giving them answers to their questions. This was instead of helping the group of students to
discuss course material. For example in the journal to one session the PSer wrote she had done the following well:

“...I could give answers to all the questions they asked...” (Jyothy, Journal for session 4, 5/11/97)

The attendance of these two PSers at the on-going support sessions was infrequent and this meant that they could not be supported in developing their approaches to running PS sessions over time.


This PS scheme illustrates that the success of PS schemes cannot be assumed. PSers need to be supported in, and monitored on, the taking up of their roles. If the PSers are not running their sessions in a way that supports students, then an alternative approach that the PSers are more comfortable with, and is effective in supporting students, needs to be identified. In this way the support that PS offers may change from year to year as new PSers and PSUs make sense of the approach. Students and teachers should review PS to choose its most appropriate form given the students who will be offering, and offered support, in each academic year. This did not happen because of the success of PS for Chemistry, Biology, Pure Mathematics and Statistics. I initially identified that PSers as the problem, rather than the particular structure of PS. The blaming of the PSers, rather than the changing of the structure of PS, led to an opportunity to support students in their learning being lost.

5.3.5 PS for Y2s

1. PS for students studying Biology and Chemistry

On the PS that was offered to Y2s, the PSer ran 29 sessions. These sessions focused on the PS users practising ‘A’ level Biology and Chemistry examination questions. In all 28 students attended at least one of these sessions, 19 students attended at least three of these sessions, and 13 attended at least five of the sessions. The average attendance at these sessions was 5.4. In terms of students' attendance these sessions were a success.
2. Reasons for the success of PS for students studying Biology and Chemistry

The main factor in the success of these sessions was the very experienced PSer who ran them. She ran very well structured sessions, that the PSUs found very relaxed and helpful. However, because of her knowledge of the subject and the structure of her sessions, it is not clear to what extent they viewed her as a Peer Supporter and to what extent they viewed her as a teacher.

I only observed one of the PS sessions for Y2s. This was because it was the fourth year the PSer had run sessions and I had observed many of the PSers sessions in previous years. As she was in the third year of her medicine degree, her time for completing journals was short. I could have demanded that she adhered to the administrative protocols I had established but it seemed churlish to alienate an excellent and experienced PSer by insisting that she adhered to my systems.

The session I observed was based around the answering of exam papers. The PSer had prepared exam questions. The group sat in a circle and the PSer asked each member of the group an element of the question in turn. If they could not answer it would be thrown open to the group. The role of the PSer was more directive than the PS for Y1s. The group was much more focused on her as the leader of the group.

The PSer gathered feedback by distributing a questionnaire in the last session that seven of the Y2s attended (see Appendix II). The structure of the sessions and the lack of closeness in educational experience between the students and the PSers did not appear to make the sessions more teacher-based. When asked to describe the sessions; three of the students said it was a 'discussion group', two describe them as 'casual and comfortable' and one as 'student-led sessions'. The final student reported that 'the atmosphere could not have been more perfect.'

However, I show in Section 5.4 that the types of students who attended the sessions were different to the students who attended the sessions for the Y1s. This difference may have been caused by the fact that PSUs saw the PSer for the Y2 students as more
of a teacher because of the more directive style of her sessions and the fact that she was studying for a medicine degree. This meant that the PSUs probably saw the PSer as an expert in biology and chemistry.

3. Lessons from PS for Y2s Biology and Chemistry

PS for Y2s does raise some issues about how close the PSers and PSUs need to be in experience for PS to really be Peer Support. The interaction between the PSer and PSUs was qualitatively different from that between the PSers and PSUs involved in PS for Y1s. In the PS for Y2s, the PSer took up a more directive role, and was seen as an authority on the subject. However, the PSUs did appear to gain from the experience and value the support they received. The important issue is to note that small changes in the organisation of a scheme, such as who offers support, can have a large effect on the style of the session. In this case using a more experienced PSer, more experienced as a learner and a PSer, led to a different type of interaction between the PSers and PSUs. In the next section I show that this lead to a different type of student using PS.

5.3.6 Conclusion of how PS operated on ‘A’ level Science

From the three schemes that have been described here there are several conclusions that can be drawn. First, PS schemes need to be developed to fit with the courses they are to support. The varying success of the two PS schemes on Y1 show that PS cannot be assumed from past successes. Even if an approach to PS works on one part of a course, with one set of PSers and students who use PS, it cannot be assumed to be the most effective form on another part of the course with another set of PSers and students who use PS. Second, different styles of PSers, with different ranges of experience, may attract different types of students to PS. To use very successful and experienced students as PSers may stop students with lower levels of previous educational achievement from attending. This could be because these students cannot identify with the PSer. This shows how altering one element of PS can lead to a change in the outcomes of the scheme.
Both of these conclusions reinforce the argument from Chapter Three that it is vital to the success of peer learning schemes to include both the peer facilitators and the students who will be offered support in the design and development of the peer learning schemes. If they work, with their teachers, in structuring the scheme then it is more likely to be one that both the peer facilitators and students offered support will be comfortable with and will find helpful.

5.4 Did students with particular levels of previous academic achievement use PS?

I used this research question to investigate whether the students who used PS were more able than the students who did not. It is based on the view that if students are giving up an hour of their time to attend PS sessions, then it may be the more able students who attend. ‘Ability’ was operationalised as previous academic achievement, as measured by students’ GCSE results and, in the case of Y2 students, their performance in the end of Y1 exams.

I examined that data in two ways. First, I examined whether there were differences in previous academic achievement between PSUs and non-PSUs. Second, I examined whether there was a correlation between previous academic achievement and attendance at PS. The results were contradictory. There was no significant differences between the groups of PSUs and non-PSUs using PS for Y1s and those using PS for Y2s. However, there were significant correlations between previous academic achievement and attendance at PS for both schemes. I resolved this apparent contradiction by examining the distribution of PSUs and non-PSUs in each quartile of GCSE scores. I found that for PS for Y1s, PSUs came from the lowest and highest previous academic achievement quartiles, whilst for PS for Y2s, the PSUs came mainly from the top 50% of Y1s as measured by previous academic achievement. I examine possible reasons for these different distributions and conclude that it is probably due to the difference in the PSUs’ perception of their PSers and the structure of the PS sessions that were examined in Section 5.3.
5.4.1. **Background information on whether students with particular levels of previous academic achievement attended PS**

There is very little qualitative data available on whether students with particular levels of previous academic achievement attended PS. In the interview with the PSers they suggested that the students who attended PS were the ‘pretty good students’. For example, Shaminder in talking about the PSUs he worked with said:

"Shaminder: They got the best grades. My group got all 90%, 100% (but) I think they were pretty good anyway.”

This was the only evidence that the PSUs were in some way different in terms of academic achievement than the non-PSUs

In examining students’ previous academic achievement, I examined their GCSE results. Students’ GCSE results were collected by the Science department as students were enrolled. Students with overseas qualifications are not included in this analysis. For the first year ‘A’ level Science students this excluded 3 out of the 108 students from this analysis, for the second years this excluded 11 out of the 95 students.

Rather than including all their GCSE’s in this analysis I narrowed it to their performance in the following: Mathematics, English Language, and Science subjects (whether this be single Science subjects like ‘Chemistry’ or the Science double award which covers all the Science subjects). I refer to these as MSE GCSE’s. This was calculated by adding students’ GCSE grades in these subjects. A GCSE at grade A being worth seven points through to a grade G being worth one point. I chose to use the score from student’s MSE GCSEs rather than the score from all of the students GCSEs because it was a better predictor of students’ performance in their end of year exams. For example, Table 5.3 shows that in three out of six subjects' students with higher MSE GCSEs score did significantly better in their end of Y1 exams. In particular, there was a significant and strong positive correlation between the MSE GCSE score and students’ performance in their Chemistry and Pure Mathematics and Statistics exams, which are the focus of the analysis of first year ‘A’ level Science students academic performance in the rest of this chapter.
Table 5.3 Spearman's Rho Correlations between GCSE Scores and Performance in promotional exams for Y1s

The comparison of how the Y2s’ GCSE results and MSE GCSE results correlated with their promotional exam results produced a similar result. The second year ‘A’ level Science students MSE GCSE’s had a significant positive correlation with the marks achieved in 6 out of 8 promotional exam papers whilst their overall GCSE scores had significant positive correlations with the marks achieved in just 2 out of 8 exam papers. Interestingly both overall GCSE scores and MSE GCSE scores were much less good at predicting ‘A’ level results. There were significant positive correlations between overall GCSE scores and ‘A’ level grades in 1 out of 7 subjects, and significant positive correlations between MSE GCSE scores and ‘A’ level grades in 2 out of 7 ‘A’ level subjects.

5.4.2 Did students with particular levels of previous academic achievement use PS for Y1s?

The evidence on whether students with particular levels of previous academic achievement used PS for Y1s was contradictory. I found that there were no significant
differences between the PSUs and the non-PSUs but there was a significant correlation between previous academic achievement and attendance at PS. I examined the distribution of MSE GCSE scores for PSUs and non-PSUs and found that the majority of PSUs came from the top and bottom 25% of MSE GCSE scores. I concluded that is was probably due to the students with lower previous academic achievement using PS to catch up with the other students, whilst the students with the highest previous academic achievement were looking to maintain their high levels of academic achievement.

1. Did PSUs on Y1 have higher previous academic achievement than non-PSUs?

<table>
<thead>
<tr>
<th></th>
<th>Non-PSUs</th>
<th>PSUs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean MSE GCSE Score</td>
<td>23.53</td>
<td>24.38</td>
<td>23.72</td>
</tr>
<tr>
<td>N</td>
<td>81</td>
<td>24</td>
<td>105</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>5.14</td>
<td>5.36</td>
<td>5.17</td>
</tr>
</tbody>
</table>

Table 5.4: Mean MSE GCSE Scores for Y1 Non-PSUs and PSUs and the Wilcoxon Mann Whitney Test comparing the two groups

The Wilcoxon Mann Whitney Test in Table 5.4 shows that on average there are no significant differences between the MSE GCSE scores of PSUs and non-PSUs. The mean MSE GCSE scores for the PSUs are only slightly higher than those of the non-PSUs. The slightly higher standard deviation of the PSUs shows that there was a greater range of MSE scores in this group. However, there is no evidence that there is a difference in previous academic achievement, as measured by MSE GCSE’s, between Y1 PSUs and non-PSUs.
1. Was it the case that the higher students previous academic achievement, the more PS sessions for Y1s students attended?

<table>
<thead>
<tr>
<th>Score in MSE GCSE's</th>
<th>Attendance at PS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation Coefficient</td>
<td>0.224*</td>
</tr>
<tr>
<td>Significance</td>
<td>0.011</td>
</tr>
<tr>
<td>N</td>
<td>105</td>
</tr>
</tbody>
</table>

* Correlation is significant at the .05 level (1 tailed)

Table 5.5 Spearman's Rho Correlations between MSE GCSE Scores and Attendance at PS for Y1s

Table 5.5 shows there is a weak but significant positive correlation between students MSE GCSE's and their attendance at PS. This shows that the higher students’ MSE GCSE scores the more PS they attended.

3. Conclusion of whether students with particular previous academic achievement used PS for Y1s.

The results of the two tests produced different results. PSUs did not have significantly higher previous academic achievement than non-PSUs, but there was a significant correlation between previous academic performance and attendance at PS.

In order to answer the research question, I examined the distribution of PSUs and non-PSUs in each quartile of MSE GCSE scores. I split these into the four quartiles of performance in MSE GCSE’s for all Y1s whose GCSE’s results had been collected by the college and analysed this in terms of attendance at PS.
Graph 5.1 shows the two groups are distributed differently in each quartile. The greatest proportion, over 50%, of PS users are in the first quartile (bottom 25%), with the second greatest proportion, just over 20%, in the fourth quartile (top 25%). The non-PSUs have a more even distribution, with the greatest proportion of their group in the second quartile.

This shows that whilst it was not the students with higher previous academic performance who attended PS, particular types of students did attend. These were the students with the highest and lowest levels of previous achievement. The reasons for this are not obvious. A possible explanation is that the students with the lowest levels of previous achievement probably attended because they felt they needed to work hard to stay on the course. The students with the higher previous achievement may have attended in order to keep up the high levels of achievement.
5.4.3 *Did students with particular previous academic achievement use PS for Y2s?*

The students who used PS for Y2s appeared to be the students with higher levels of previous academic achievement. Whilst there was no significant difference between the mean MSE GCSE scores of PSUs and non-PSUs, there was a significant but weak correlation between MSE GCSE scores and attendance at PS. There were also significant and strong correlations between the Y2s’ performance in the promotional exams they had sat at the end of Y1. An examination of the distribution of PSUs in each quartile of MSE GCSE Scores for Y2s showed that over 75% of them were in the top 50% of students. I argue that the reasons for PS attracting the students with higher previous achievement, were their knowledge of the ‘A’ level success that the PSer had achieved and the more formal style of her sessions.

1. **Did PSUs on Y2 have higher previous academic achievement than non-PSUs?**

The Wilcoxon Mann Whitney Test in Table 5.6 shows that there were no significant differences between the MSE GCSE scores of PSUs and non-PSUs. The difference between the scores of PSUs and non-PSUs is more than double than was the case on PS for Y1s. It is also noticeable that the mean MSE GCSE scores of the Y2 students was lower than that of the Y1 students.
Table 5.6: Mean MSE GCSE Scores for Y2 Non-PSUs and PSUs and the Wilcoxon Mann Whitney Test comparing the two groups

2. Was it the case that the higher their previous academic achievement, the more PS sessions for Y2s students attended?

Table 5.7 Spearman’s Rho Correlations between MSE GCSE Scores, Promotional Exams and Attendance at PS for Y2s.

In examining the previous academic achievement of Y2s, there were two measures available, their MSE GCSE’s and their performance in the promotional exams. The promotional exams in 1996-7, included biology and two chemistry papers. Table 5.7 shows there were significant positive correlations between students’ MSE GCSE’s, their performance in the two promotional chemistry exams, the promotional biology exam paper and their attendance at PS for Y2s. The correlations between students’ MSE GCSEs and the chemistry exam marks are particularly strong.
3. Conclusion of whether students with particular levels of previous academic achievement used PS for Y2s.

The two statistical tests again produced contradictory results. I split the students into quartiles based on their GCSE MSE results and examined the level of attendance at PS for each quartile.

![Graph 5.2: Percentage of non-PSUs and PSUs in each Quartile of MSE GCSE's for Y2s](image)

As Graph 5.2 shows there were different distributions of GCSE average score in MSEs between PS users and non-users. The vast majority of PSUs came from the top 50% of students, as measured by their MSE GCSE results. Over 45% of PSUs came from the top 25% of MSE GCSE scores. This compares with 45% of non-PSUs in the bottom 25% of MSE GCSE scores. Therefore it was the students with the higher previous academic achievement who used PS for Y2s.

The reasons for this are not clear. It may have been that following their success in the promotional exams, the PSUs were motivated to attend PS to help them to ensure
success in their ‘A’ level exams. One factor that should not be discounted was the PSer who ran the PS for Y2s sessions. She had very good ‘A’ level results, and had progressed to study medicine after completing her ‘A’ levels. In this way she was a natural role model for the high achieving Chemistry and Biology ‘A’ level students who used PS for Y2s. However, the students with lower levels of previous achievement may not have identified with her. Finally, the styles of the sessions were more formal than those on PS for Y1s. The PSer directed more of the proceedings, and communication in the session tended to be through the PSer who asked each student in turn to answer a question. This may have discouraged the students with lower previous academic achievement, whilst offering the high achieving students an opportunity to demonstrate and develop their knowledge. The more formal style of the sessions was probably attractive to students who were successful within a traditional teaching and learning environment.

5.4.4 Conclusion of whether students with particular levels of previous academic achievement used PS

The two PS schemes on ‘A’ level Science differed in terms of the levels of previous achievement of the PSUs. On PS for Y1s, the PSUs were made up of the students with the highest and lowest levels of previous achievement. A probable explanation for this is that the students with the lowest levels of previous achievement felt that they needed the help PS offered, whilst the students with the highest levels of previous achievement wished to continue their academic success.

PS for Y2s attracted the students with high levels of previous academic achievement. These students were probably motivated by a desire to achieve highly in their ‘A’ level exams. The reason for the schemes attracting different types of students is explained by the PSer who ran the PS for Y2s. Whereas the PSers for Y1 were Y2 students, the PSer on Y2 had been a PSer for several years and was known as a very successful student. The PSUs probably saw her as an expert. The style of her sessions probably added to this impression. They were more formal and focused than the PS for Y1s sessions.
The difference in the types of students who used the two schemes shows how different styles of PS and Pser will attract different types of students. This should be remembered when designing PS schemes. For example, it is unlikely that the style of PS for Y2s would have attracted the lower achieving students. In order to support these students an alternative style of PS would need to be designed which was different. The most effective way to do this would have been to include these students in the design of the PS scheme.

5.5 Did students with particular approaches to studying use PS?

This research question focused on whether the students who used PS had particular approaches to studying. I used Richardson’s (1990) version of the Approaches to Studying questionnaire to investigate this. I found that there was no evidence to suggest that PSUs had significantly different approaches to studying, or to suggest that students who attended PS more regularly had significantly more reproducing or meaning approaches to learning. However, it was noticeable that on PS for Y2 PSUs had more reproducing, and less meaning orientated, approaches to studying than the non-PSUs. This is particularly interesting as they had higher levels of previous achievement than non-PSUs. It is suggested that the structure of ‘A’ level exams lead to students adopting a strategic approach to studying.

5.5.1 Background information on whether students who had particular approaches to studying used PS.

There is very little qualitative evidence on whether students who used PS had particular approaches to studying. Nazia, in the interviews with the PserSers, suggested that it was the students who studied more who attended PS.

“Nazia: And the ones that came to PS, they seemed to be the ones who studied more out of the first years. They all used the past papers and we told them what books to use and everything.”
Her description could point to students who adopted a more reproducing or a more meaning orientated approach to studying. The students who used PS following what the PSers told them to read could point to a more cue-conscious approach that suggests that they might be more reproducing approach to studying. However, Nazia seems to suggest that she saw the students as more serious, and therefore, perhaps more meaning orientated students.

I used measurements of meaning orientated and reproducing orientated learning to examine students' approaches to their studies. The elements, as characterised by Ramsden and Entwistle (1981), that in Richardson's (1990) questionnaire make up the meaning orientated, and the reproducing orientated approaches to studying, suggest that students using a meaning orientation would seem more likely to use PS than those who adopt a reproducing orientated approach. The meaning orientation is characterised by active questioning in learning, relating knowledge to other parts of the course, and relating evidence to conclusions. Whereas the reproducing orientation is characterised by a pre-occupation with memorisation, relying on staff to define learning tasks, pessimism and anxiety about academic outcomes, and an over-cautious reliance on details. Given that the sessions were focused on PSUs being involved in developing their own answers to questions, it appears likely PS would appeal to students with a meaning orientation to learning.

5.5.2 Did students with particular approaches to studying use PS for Y1s?

On PS for Y1s there was no evidence to suggest that students who used PS had particular approaches to learning. There were no significant differences between PSUs and non-PSUs and there were no significant correlations between meaning orientated or reproducing orientated approaches to studying.

In the first term the Y1s were asked to complete Richardson's (1990) shortened version of the Attitudes to Studying Questionnaire. The students answered the questions by responding to a series of statements, either agreeing strongly (given a
value of 5) through to disagreeing strongly (given a value of 1). Statements were either indicative of an element of a meaning orientated or reproducing orientated approach to studying. The values for each element of a meaning orientated approach were added to give a meaning orientated score, and the values for each element of a reproducing orientated approach were added to give a reproducing orientated approach.

1. Did PSUs on Y1 have more meaning and less reproducing orientated approaches to studying than non-PSUs?

The PSUs’ approaches to studying were not significantly different to the non-PSUs, see Tables 5.8 and 5.9. A Wilcoxon Mann-Whitney test comparing the mean scores of PSUs and non-PSUs showed no significant differences between the two groups even though PSUs had higher mean meaning orientated and lower mean reproducing orientated scores than non-PSUs. The standard deviation for the PSUs was lower, which indicates less variation in the scores. However, despite this it cannot be concluded that the PSUs had significantly different approaches to studying than the non-PSUs.

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<th>Non-PSUs</th>
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<td>Std. Deviation</td>
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</tr>
<tr>
<td>Mann Whitney U</td>
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</tr>
<tr>
<td>Wilcoxon W</td>
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<td></td>
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<tr>
<td>Z</td>
<td>-.499</td>
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<td>p-value (1 tailed)</td>
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Table 5.8: Mean Meaning Orientated Scores for Y1 Non PSUs and PSUs and the Wilcoxon Mann Whitney Test comparing the two groups

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<td>Mean Reproducing Orientated Score</td>
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<td>54.76</td>
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</tr>
<tr>
<td>N</td>
<td>44</td>
<td>21</td>
<td>65</td>
</tr>
<tr>
<td>Std. Deviation</td>
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<td>Z</td>
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<td>p-value (1 tailed)</td>
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</table>

Table 5.9: Mean Reproducing Orientated Scores for Y1 Non-PSUs and PSUs and the Wilcoxon Mann Whitney Test comparing the two groups
2. Was it the case that the more meaning orientated and less reproducing orientated their approaches to studying the more PS sessions for Y1s students attend?

Table 5.10 shows there were no significant correlations between students approaches to studying and their attendance at PS. There is no evidence to suggest that students who attended PS had more meaning orientated and less reproducing orientated approaches to learning.

<table>
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<tr>
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<td><strong>Meaning Orientated Score</strong></td>
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<tr>
<td>Correlation Coefficient</td>
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<tr>
<td>Significance</td>
<td>.201</td>
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<tr>
<td>N</td>
<td>65</td>
</tr>
<tr>
<td><strong>Reproducing Orientated Score</strong></td>
<td></td>
</tr>
<tr>
<td>Correlation Coefficient</td>
<td>.003</td>
</tr>
<tr>
<td>Significance</td>
<td>.492</td>
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<td>N</td>
<td>65</td>
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</tbody>
</table>

Table 5.10 Spearman’s Rho Correlations between Students Scores on Approaches to Learning Questionnaire and Attendance at PS for Y1s

3. Conclusion of whether students with particular approaches to studying used PS for Y1s

There is no evidence to suggest that students with particular approaches to studying used PS. Students with reproducing and meaning orientated approaches to studying seemed to use PS. This could be because the two sides of PS appealed to students with both approaches to studying. Those who sought to understand their subject were given the opportunity to discuss ideas, whilst those who wanted to be told what to learn were given tips about which books to read and how to answer exam questions. However, in Section 6.3.1, I show that PSUs develop less meaning orientated approaches to studying by the end of the academic year. I argue that this is due to both the structure of ‘A’ level exams, and PS helping PSUs to understand how to tackle the course.
5.5.3 Did students with particular approaches to studying use PS for Y2s?

The students who used PS for Y2s did not have significantly different approaches to studying than the students who did not use PS. However, although there were no significant differences, attendance at PS did correlate positively with reproducing orientated scores and negatively with meaning orientated scores. This appears to be counter intuitive given their higher previous academic achievement. I argue that this is due to the structure of ‘A’ level exams, which encourage students to learn how to answer particular types of exam questions rather than understanding what they are learning.

The second year ‘A’ level Science students were given Richardson’s (1990) shortened version of the Attitudes to Studying Questionnaire in the Summer Term of the first year of study, i.e. in May 1997. The questionnaire was analysed in the same way as it was with the first years from 1997-8.

1. Did PSUs on Y2 have more meaning orientated and less reproducing orientated approaches to learning than non-PSUs?

Tables 5.11, and 5.12, show that the PSUs had higher reproducing, and lower meaning, orientated scores than the non-PSUs. These differences are not significant but it is counter-intuitive that those with higher MSE GCSE scores would adopt more reproducing orientated approach to learning, if it is accepted that the Approaches to Studying Questionnaire is a reliable and valid measure of students approaches to learning.
Table 5.11: Mean Meaning orientated Scores for Y2 Non-PSUs and PSUs and the Wilcoxon Mann Whitney Test comparing the two groups

<table>
<thead>
<tr>
<th></th>
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<th>PSUs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Meaning Orientated Score</td>
<td>35.86</td>
<td>35.64</td>
<td>35.82</td>
</tr>
<tr>
<td>N</td>
<td>49</td>
<td>11</td>
<td>60</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>6.57</td>
<td>2.73</td>
<td>6.0352</td>
</tr>
<tr>
<td>Mann Whitney U</td>
<td>249.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>315.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td>-.393</td>
<td></td>
<td></td>
</tr>
<tr>
<td>p-value (1 tailed)</td>
<td>.695</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5.12: Mean Reproducing Orientated Scores for Y2 Non-PSUs and PSUs and the Wilcoxon Mann Whitney Test comparing the two groups

<table>
<thead>
<tr>
<th></th>
<th>Non-PSUs</th>
<th>PSUs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Reproducing Orientated Score</td>
<td>39.24</td>
<td>40.81</td>
<td>39.53</td>
</tr>
<tr>
<td>N</td>
<td>49</td>
<td>11</td>
<td>60</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>7.18</td>
<td>8.47</td>
<td>7.38</td>
</tr>
<tr>
<td>Mann Whitney U</td>
<td>229.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>1454.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td>-.725</td>
<td></td>
<td></td>
</tr>
<tr>
<td>p-value (1 tailed)</td>
<td>.439</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Was it the case that the more meaning orientated and less reproducing orientated their approaches to studying the more PS sessions for Y2s students attend?

Table 5.13 Spearman’s Rho Correlations between Students Scores on Approaches to Learning Questionnaire and Attendance at PS for Y2s

<table>
<thead>
<tr>
<th></th>
<th>Correlation Coefficient</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meaning Orientated Score</td>
<td>-.154</td>
<td>.120</td>
</tr>
<tr>
<td>Reproducing Orientated Score</td>
<td>.139</td>
<td>.145</td>
</tr>
</tbody>
</table>

Table 5.13 shows that there was no significant correlations between Y2s’ approaches to studying and their levels of attendance to PS. What is noticeable, given their significantly higher MSE GCSE scores and marks in the promotional exam, is that there is a negative correlation between meaning orientated scores and attendance at
PS. Also, there is a positive correlation between reproducing orientated scores and attendance at PS.

3. **Conclusion of whether students with particular approaches to studying use PS for Y2s**

There were no significant differences between PSUs and non-PSUs approaches to studying on PS for Y2s. There were also no significant correlations between students approaches to studying and their attendance at PS for Y2s. However, PSUs did have higher mean reproducing scores and lower mean meaning orientated scores than non-PSUs. There was also a non-significant positive correlations between reproducing orientated scores and attendance at PS, and non-significant negative correlations between meaning orientated scores and attendance at PS. Given the PSUs’ higher levels of previous achievement, this appears counter-intuitive. The best explanation for this is that the experience of studying ‘A’ levels encourages students to adopt a more reproducing approach to learning. The PS sessions focused on answering exam questions because success in ‘A’ levels is based upon students ability to answer questions, the formats of which are repeated over the years. This may make the learning of how to tackle exam questions more important than understanding the course material. I show in Section 6.3.1, that at end of the academic year the PSUs on Y1 adopt less meaning orientated approaches to learning, and illustrate how PS was instrumental in them becoming more strategic learners. It appears likely that the Y2 students with the highest levels of previous achievement had already been through this process without the aid of PS.

5.5.4 **Conclusion of whether students with particular approaches to studying use PS?**

It cannot be concluded that the students who attended the PS for Y1s or Y2s sessions had particular approaches to studying. However, there were interesting differences between Y1s and Y2s. The mean scores of Y1 PSUs and non-PSUs, as well as the correlations between approaches to studying and attendance at PS for Y1s, indicated that the students who attended PS for Y1s had more meaning orientated approaches to studying. However, the data on the Y2s suggested a relationship between attendance
at PS and more reproducing orientated approaches to learning. Whilst none of these differences are significant, it does seem that there are two probable reasons for these differences that are related. First, the structure of ‘A’ level exams discourage a meaning approach to studying, with the main test for students being the ability to answer questions the formats of which are repeated over the years. Second, the more formal style of the PS for Y2s would have appealed to students with more reproducing approaches to studying, who seek to have more direction from others in their learning. These reasons are supported by the evidence in Section 6.3.1 that PSUs on Y1 become significantly less meaning orientated in their learning having attended PS. It is also supported by the correlations between students' performance in their end of year exams. Tables 5.14 and 5.15 show that again although for the Y1s the correlations between meaning orientated score and exam performance is positive, for the Y2s it is negative. Whilst for the correlations between reproducing orientations and performance in the end of year exams are negative for Y1s and positive Y2s. Although most of these differences are not significant, the difference between the correlations for Y1 and Y2s are striking. They suggest that higher achieving students become more reproducing orientated, and less meaning orientated, in their studies over the time they are studying ‘A’ level Science.

<table>
<thead>
<tr>
<th></th>
<th>Meaning Orientated Score</th>
<th>Reproducing Orientated Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation Coefficient</td>
<td>.332*</td>
<td>-.284</td>
</tr>
<tr>
<td>Significance</td>
<td>.030</td>
<td>.055</td>
</tr>
<tr>
<td>N</td>
<td>33</td>
<td>33</td>
</tr>
</tbody>
</table>

* Correlation is significant at the .05 level (1 tailed)

Table 5.14 Spearman's Rho Correlations between Meaning Orientated and Reproducing Orientated Scores and Performance in Promotional Exams for Y1s.
Table 5.15 Spearman’s Rho Correlations between Meaning Orientated and Reproducing Orientated Scores and ‘A’ level Grades for Y2s.

<table>
<thead>
<tr>
<th></th>
<th>Chemistry ‘A’ level Grade</th>
<th>Biology ‘A’ level Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meaning Orientated Score</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation Coefficient</td>
<td>-.134</td>
<td>-.147</td>
</tr>
<tr>
<td>Significance</td>
<td>.281</td>
<td>.275</td>
</tr>
<tr>
<td>N</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td><strong>Reproducing Orientated Score</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation Coefficient</td>
<td>.270</td>
<td>.343</td>
</tr>
<tr>
<td>Significance</td>
<td>.118</td>
<td>.075</td>
</tr>
<tr>
<td>N</td>
<td>21</td>
<td>19</td>
</tr>
</tbody>
</table>

5.6 Did students who used PS perform better academically than students who did not use PS?

In this section I demonstrate that on both PS schemes, students who use PS perform better academically than students who do not use PS. I show that the PSUs and the PSers both felt that the PSUs had gained from their involvement in PS. I demonstrate that on both schemes PSUs perform significantly better than non-PSUs, and that the more PS students attended the better their academic performance. I also show that even when students’ levels of previous achievement are controlled for there are still correlations between attendance at PS and students’ final marks. For PS for Y1s, students of all levels of previous achievement gained the more they attended PS. On PS for Y2, it was students in the top 75% of previous achievement who benefited. This is not unexpected given that there were only two PSUs in the bottom 25% of students as measured by previous academic achievement. I conclude that the evidence suggests that students with all levels of previous achievement benefited from PS. I did not control for students approaches to studying. This is for two reasons. First, I have shown that there was no evidence to suggest that students with particular approaches to studying used PS. Second, Tables 5.14 and 5.15 in section 5.4.5 showed that there was only one significant correlation between students’ approaches to studying and their performance in their end of year exams.
5.6.1 Did attendance at PS for Y1s improve students' academic performance?

The students using PS for Y1s performed better than the students who did not use PS for Y1s. The PSUs using PS for Y1s felt that they had gained skills from their involvement in PS, and that it had helped them to improve their academic performance. The PSers offering PS for Y1s felt that PS had helped the PSUs to work in groups, to understand what the course involved, and to be more independent learners. The statistical data shows that PSUs did significantly better in their end of year exams than non-PSUs and that the more PS students attended the higher their grades. When students' previous academic achievement is controlled for then for students at all levels of previous achievement there is a correlation between attendance at PS. This shows that there is strong evidence that attendance at PS improved students' academic performance. The triangulation and quantitative and qualitative evidence is important as the statistical evidence alone could never control for all the variables that have an impact on individual students' achievement. It is possible that the students who used PS were more motivated than those who did not attend. However, the weight of evidence of the qualitative and quantitative data suggests that students who used PS improved their levels of academic performance because of it, even if the level of improvement cannot be isolated.

1. Qualitative evidence on whether attendance at PS for Y1s improved students' academic performance?

The qualitative evidence suggests that PS for Y1s helped to improve students' academic performance. The students who used PS felt that they had improved their grades because of their involvement in PS. They also felt they had gained interpersonal and learning skills. The PSers felt that the PSUs had gained an understanding of what was expected on the course and how to tackle the course.

The students who used PS felt they had improved their academic performance as a result from attending PS. However, they did not feel that it had prevented them dropping out. In their responses to the end of year PS Questionnaire, 71% reported that they would have done less well if they had not attended PS. Twenty-three percent
felt they would have enjoyed the course less. Interestingly no students reported that they would have dropped out without PS, and similarly no students reported that they would have done better without PS.

The students perceptions of how they benefited in terms of interpersonal and learning skills are set out in Table 5.17. The responses in this are drawn from the end of year questionnaire that is completed by users and non users (see Appendix I). Forty-two of the 50 students who attended PS at least once completed this questionnaire.

<table>
<thead>
<tr>
<th>PS helped me to:</th>
<th>% Agreeing or Agreeing Strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve my group work skills</td>
<td>71 %</td>
</tr>
<tr>
<td>Increase my confidence</td>
<td>71 %</td>
</tr>
<tr>
<td>Reduce the barriers between me and other students</td>
<td>71 %</td>
</tr>
<tr>
<td>Understand course concepts</td>
<td>71 %</td>
</tr>
<tr>
<td>Understand what was expected on the course</td>
<td>68 %</td>
</tr>
<tr>
<td>Increase my motivation</td>
<td>62 %</td>
</tr>
<tr>
<td>Revise</td>
<td>62 %</td>
</tr>
<tr>
<td>Improve my communication skills</td>
<td>57 %</td>
</tr>
<tr>
<td>Improve my listening skills</td>
<td>57 %</td>
</tr>
<tr>
<td>Improve my understanding of how people learn</td>
<td>42 %</td>
</tr>
<tr>
<td>Improve my essay writing</td>
<td>14 %</td>
</tr>
</tbody>
</table>

Table 5.16: Benefits Y1s who used PS reported from attending the sessions

As Table 5.16 shows the Y1s reported considerable benefits from attending the PS sessions. The most frequently recorded benefits were the improving of their group work skills, increases in confidence, and the increased understanding of course concepts. Students also felt they had increased their understanding of what was expected of them on the course as well as their motivation and their revision techniques.

In their group interview the PSers picked up on some of the benefits that students had reported. The PSers felt that PS had helped the PS users to work in groups and it had helped them to understand what was expected on the course.

Ola in her individual response to the group interview felt that students had gained from discussing topics and had also gained from working together in groups:
"Those that felt they were gaining something from the sessions came back every week to exercise their brain like in discussing and telling us all they knew about a topic. They obviously thought it was the best place to get past papers . . . Something I think they learnt quite well was to work with one another, together in a group. They learnt to care for each other, they all wanted to be the one to explain to someone that didn’t understand what we were discussing. They learnt how to use their imagination, their brains and how to use what they knew to answer questions. I once saw a group of boys and girls discussing which was fantastic because most of the time during the sessions the boys and girls don’t like working together, so I was really surprised. They made friends as well because the atmosphere was more relaxed and so easier to make friends.” (Ola’s written answers to the interview questions)

The PSers also felt that it had helped the students to understand what was expected on the course. This understanding was in two forms. First, the students had learned about the need to work independently through the year, and second they had learnt to practice their exam technique.

The PSers felt that the sessions had helped the PS users to understand what was expected on the course, in terms of working independently:

"Ola: I think they thought they were gaining something from it because if they weren’t then they wouldn’t turn up. So they actually knew they were getting something back . . . I think it helps their independence, being like learning on their own.

Nazia: A lot of them just depend on what they are taught in class and we told them ‘You have to read it yourself, you can’t just depend on that because they touch on a topic and they expect you to read it’ because they didn’t realise . . .

Shaminder: They learnt about working at the same pace throughout the two years, not just at the examination period and also working independently so that you’ve done everything before hand and when its being taught in class it makes understanding so much easier.”

Another key part of learning about what was expected on the course was understanding about exam technique. The PSers were very clear that the students needed to learn how to answer exam questions if they were to be successful on the course:

"Shaminder: It’s good to get it started off straight away rather than just learning (exam) technique at the end. During the two years you need to learn
the technique itself. Having knowledge is one thing but knowing what the
they want, the examiners themselves, that progresses over the two years.
Nazia: A lot of them didn’t really know about past papers or you can get
them or anything.
Ola: Some of them didn’t really know what the course was like . . .
Nazia: ‘Cause going from GCSE to A level is a really big jump and its a lot
harder and you’ve got to do a lot more work, there are a lot doing it just how
they did it at GCSE.”

This pre-occupation with the final exam is probably what led the PSUs to adopt more
reproducing orientated approaches to studying that I demonstrate in Section 6.3.1.

The qualitative evidence suggests that the students who attended PS for Y1s
improved their academic performance. The students themselves felt that they had, as
well as developing other important skills. The PSers felt that the PSUs had developed
a greater understanding of what was expected on the course, as well of how to study
to achieve on the course.

2. Did PSUs on Y1 achieve higher marks than non-PSUs in their end of year
examinations?
The PSUs performed better than non-PSUs in their end of year exams. On Y1 ‘A’
level Chemistry their mean grade was over 10% higher than the non-PSUs. On ‘A’
level Pure Mathematics and Statistics, the PSUs’ mean grade was nearly 20% higher
than the non-PSUs. These differences were both statistically significant.

I compared the average marks of the group of PS users with the non-users of PS in
their end of year Chemistry and Pure Mathematics promotional examinations. I could
not examine Biology or Statistics because these ‘A’ levels were modular and so the
students did not take promotional examinations. For the other ‘A’ level subjects the
students attendance at PS was very low and so no comparison was made between
attendance at PS and students performance in the Pure and Applied Mathematics,
Computing, and Physics ‘A’ level promotional exams.

There was evidence to conclude that those students who attended PS performed better
than those students who did not. As Tables 5.17 and 5.18 illustrate, those students
studying the first year of ‘A’ level Chemistry who attended at least five PS sessions on average did significantly better than those who attended less than five. Those attending at least five sessions achieved on average 36% in their exams compared with an average of 26% achieved by those who attended less than five sessions.

On the first year of ‘A’ level Pure Mathematics and Statistics, the difference between those who attended five or more and less than five are even greater. Those who attended achieved on average 72% compared to an average of 53% for those who attended less than five sessions.

<table>
<thead>
<tr>
<th></th>
<th>Non-PSUs</th>
<th>PSUs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Chemistry Mark</td>
<td>26.00</td>
<td>36.47</td>
<td>30.23</td>
</tr>
<tr>
<td>N</td>
<td>28</td>
<td>19</td>
<td>47</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>16.67</td>
<td>17.60</td>
<td>17.65</td>
</tr>
</tbody>
</table>

Mann Whitney U 172.00*
Wilcoxon W 578.00
Z -2.039
p-value (1 tailed) .021

* p < 0.05

Table 5.17: Mean Promotional Chemistry Examination Results for Y1 Non-PSUs and PSUs and the Wilcoxon Mann Whitney Test comparing the two groups

<table>
<thead>
<tr>
<th></th>
<th>Non-PSUs</th>
<th>PSUs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Pure Mathematics and Statistics Mark</td>
<td>52.89</td>
<td>71.93</td>
<td>65.08</td>
</tr>
<tr>
<td>N</td>
<td>9</td>
<td>16</td>
<td>25</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>21.9</td>
<td>17.18</td>
<td>20.77</td>
</tr>
</tbody>
</table>

Mann Whitney U 35.50*
Wilcoxon W 80.50
Z -2.068
p-value (1 tailed) .0195

* p < 0.05

Table 5.18: Mean Promotional Mathematics and Statistics Examination Results for Y1 Non-PSUs and PSUs and the Wilcoxon Mann Whitney Test comparing the two groups

3. Was it the case that the more PS sessions for Y1s students attended the higher their marks in their end of year examinations?
I used the Spearman’s rank order correlation to examine if the students who attended more PS sessions achieved higher marks in their end of year Chemistry and Pure Mathematics promotional examinations.
Table 5.19 shows that there were significant positive correlations between students’ attendance at PS and their performance in the end of year examinations. This shows that the more PS that students attended the better they tended to do in their promotional exams.

<table>
<thead>
<tr>
<th></th>
<th>Attendance at PS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry Promotional Exam</td>
<td>Correlation Coefficient</td>
</tr>
<tr>
<td></td>
<td>Significance</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Mathematics &amp; Statistics Exam</td>
<td>Correlation Coefficient</td>
</tr>
<tr>
<td></td>
<td>Significance</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
</tbody>
</table>

* Correlation is significant at the .05 level (1 tailed)
** Correlation is significant at the .01 level (1 tailed)

Table 5.19 Spearman’s Rho Correlations between Students’ Marks in the Promotional Exams and Attendance at PS for Y1s.

4. Was it the case that, for students with similar previous academic achievement, the more PS sessions for Y1s students attended the higher their marks in their end of year?

I have already shown that MSE GCSE scores are a good predictor of promotional exams score and a slightly less good predictor of ‘A’ level grades. If PS was to benefit students at all levels one would expect significant positive correlations between students’ performance in their examinations and their levels of attendance at PS in each of the three groups of percentiles; the bottom 25%, middle 50%, and top 25% of students according to their MSE GCSE results. I have dealt with the quartiles differently from earlier in the chapter. I have split them into three groups; the bottom 25%, the middle 50%, and the top 25%. I have done this to increase in the number of students in each group to allow for a more meaningful comparison.
Table 5.20 Spearman’s Rho Correlations between Students Promotional Exam Results and Attendance at PS for Y1s split by MSE GCSE Quartiles

<table>
<thead>
<tr>
<th>Bottom 25% of Mean MSE GCSEs</th>
<th>Chemistry Promotional Exam Mark</th>
<th>Correlation Coefficient</th>
<th>Significance</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pure Mathematics &amp; Statistics Promotional Exam Mark</td>
<td>Correlation Coefficient</td>
<td>.615</td>
<td>.053</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Middle 50% of Mean MSE GCSEs</th>
<th>Chemistry Promotional Exam Mark</th>
<th>Correlation Coefficient</th>
<th>Significance</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pure Mathematics &amp; Statistics Promotional Exam Mark</td>
<td>Correlation Coefficient</td>
<td>.807**</td>
<td>.008</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Top 25% of Mean MSE GCSEs</th>
<th>Chemistry Promotional Exam Mark</th>
<th>Correlation Coefficient</th>
<th>Significance</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pure Mathematics &amp; Statistics Promotional Exam Mark</td>
<td>Correlation Coefficient</td>
<td>.898**</td>
<td>.003</td>
<td>7</td>
</tr>
</tbody>
</table>

* Correlation is significant at the .05 level (1 tailed)
** Correlation is significant at the .01 level (1 tailed)

Table 5.20 shows the correlation between Y1s’ attendance at PS and their performance in their Chemistry and Pure Mathematics and Statistics Promotional Examinations for the Top 25%, middle 50% and bottom 25% of students based upon their ability as measured by their MSE GCSE scores.

It shows that there are significant positive correlations between students’ attendance at PS and their marks in the Chemistry Promotional Exam at all three levels of ability, as measure by previous academic achievement. This shows that at all levels of ability range students who attend more PS perform better than students who attend less PS. In the Pure Mathematics and Statistics Exam it is the students who are in the middle 50% and top 25% that attended more PS who do significantly better than those students who attended less PS sessions. The correlation between attendance at PS and exam marks for the Pure Mathematics and Statistics Exam for the bottom 25% of students in strongly positive even though it is not significant. It is also very close to
being significant. Given the other evidence I conclude that for PS for Y1s that, at all levels of previous academic achievement, the more PS students attended the better they did in their end of year exams.

5. Conclusion of whether attendance at PS for Y1s improved students’ academic performance.

PS seemed to improve students’ academic performance. It can be concluded that Y1 PSUs on average performed significantly better in Chemistry and Pure Mathematics and Statistics than those who attended less than five the PS sessions. It can also be concluded that the more PS students on first year ‘A’ levels Chemistry and Pure Mathematics and Statistics attended the better they performed in their promotional exams. Finally, it can be concluded that at all levels of previous academic achievement the more PS students attended the higher their marks in their end of year exams. How much of this can be said to be due to PS is not clear. I have not controlled for various factors that affect students’ learning; in particular I have not controlled for motivation. However, the triangulation of qualitative and quantitative evidence suggested that I can conclude that PS did help to improve students academic performance, even if the level of improvement in students’ performance is not clear.

5.6.2 Did attendance at PS for Y2s improve students’ academic performance?

The students using PS for Y2s performed better then the students who did not use PS for Y2s. The PSUs using PS for Y2s felt that they had gained improved exam technique and revision skills from their involvement in PS. The PSUs performed significantly better in their ‘A’ level examinations, and for the two ‘A’ level subjects covered in the sessions, the more PS sessions students attended, the higher the grades they achieved. I show that for the students in the top 75% of previous academic performance, there were very strong and significant correlations between attendance at PS, and performance in their ‘A’ level Chemistry. I also found that there was a strong and significant correlation between students’ attendance at PS and their performance in the Biology ‘A’ level for students in the top 25% of mean MSE GCSE scores. However, whilst this is strong evidence that PS helped students’
improve their academic performance, one factor can still not be accounted for. It seems likely that students who attended PS were the students who were more motivated to do well in their exams. However, even though there is less qualitative evidence on this part of the case study, what evidence there is suggests that attendance at PS helped students to improve their performance in their ‘A’ level exams.

1. Qualitative evidence on whether attendance at PS for Y2s improved students’ academic performance.

On PS for Y2s, there was considerably less qualitative evidence about whether the PSUs performed better than the non-PSUs in their exams. However, the ways in which the students felt supported does suggest that PS helped them in their exams. All of the respondents who attended PS for Y2s reported that they had gained support in exam technique, whilst three of the seven students felt they had developed their revision skills. Another of the benefits that the students cited was the development of their communication skills; this was mentioned by two of the students.

The PS sessions for Y2s were run to support students in their ‘A’ level Chemistry and Biology. So it is these two subjects that I will examine to see if Y2 PSUs performed better than non-PSUs.

2. Did PSUs on Y2 gain higher marks than non-users in their end of year examinations?

There are significant differences between the average final ‘A’ level grades in Chemistry, and Biology for PSUs and non-PSUs. These are shown in Tables 5.21, and 5.22. In ‘A’ level Chemistry students who attended at least five PS sessions achieved an average of a grade ‘C’ compared to an average of a grade ‘N’ for students who attended less than five sessions. In ‘A’ level Biology students who attended five or more PS sessions achieved an average of a grade ‘C’ compared with an average of a grade ‘E’ for non-users. Therefore, it can be concluded that Y2 PSUs performed significantly better in their ‘A’ level exams than the non-PSUs.
Table 5.21: Mean Chemistry 'A' Level Grades for Y2 Non-PSUs and PSUs and the Wilcoxon Mann Whitney Test comparing the two groups

<table>
<thead>
<tr>
<th></th>
<th>Non-PSUs</th>
<th></th>
<th>PSUs</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Chemistry Grade</td>
<td>1.14</td>
<td>4.38</td>
<td>2.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>21</td>
<td>13</td>
<td>34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>2.01</td>
<td>1.56</td>
<td>2.42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mann Whitney U 33.00
Wilcoxon W 264.00
Z -3.819
p-value (1 tailed) .000**

**p < 0.01

Table 5.22: Mean Biology 'A' Level Grades for Y2 non-PSUs and PSUs and the Wilcoxon Mann Whitney Test comparing the two groups

<table>
<thead>
<tr>
<th></th>
<th>Non-PSUs</th>
<th></th>
<th>PSUs</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Biology Grade</td>
<td>2.11</td>
<td>4.00</td>
<td>2.91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>19</td>
<td>14</td>
<td>33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>1.52</td>
<td>1.30</td>
<td>1.70</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mann Whitney U 48.50
Wilcoxon W 238.50
Z -3.129
p-value (1 tailed) .001**

**p < 0.01

3. Was it the case that the more PS sessions for Y2s students attended the higher their marks in their end of year examinations?

Table 5.23 shows that there were significant positive correlations between students’ attendance at PS for Y2s and their final grades in 'A' level Chemistry and Biology. These correlations are much stronger than the correlations found between students’ attendance at PS for Y1s and their performance in their promotional exams. This is not surprising given that students who attended the second year 'A' level Science PS were the more able students, as measured by the MSE GCSE results and their performance in their promotional exams when they were in Y1. However, it can be concluded that in Chemistry and Biology, the subjects that PS for Y2s supported, the more PS students attended, their higher their 'A' level grades.
**Correlation is significant at the .01 level (1 tailed)

Table 5.23 Spearman's Rho Correlations between Students' 'A' level Grades and Attendance at PS for Y2s

4. Was it the case that, for students with similar previous academic achievement, the more PS sessions for Y2s students attended the higher their marks in their end of year?

<table>
<thead>
<tr>
<th>Bottom 25% of Mean MSE GCSEs</th>
<th>Chemistry 'A' Level Grade</th>
<th>Correlation Coefficient</th>
<th>Significance</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Correlation Coefficient</td>
<td>0.156</td>
<td>0.344</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Significance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biology 'A' Level Grade</td>
<td>Correlation Coefficient</td>
<td>0.000</td>
<td>0.500</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Significance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Middle 50% of Mean MSE GCSEs</th>
<th>Chemistry 'A' Level Grade</th>
<th>Correlation Coefficient</th>
<th>Significance</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Correlation Coefficient</td>
<td>0.894**</td>
<td>0.000</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Significance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biology 'A' Level Grade</td>
<td>Correlation Coefficient</td>
<td>0.271</td>
<td>0.210</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Significance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Top 25% of Mean MSE GCSEs</th>
<th>Chemistry 'A' Level Grade</th>
<th>Correlation Coefficient</th>
<th>Significance</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Correlation Coefficient</td>
<td>0.847**</td>
<td>0.000</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Significance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biology 'A' Level Grade</td>
<td>Correlation Coefficient</td>
<td>0.698**</td>
<td>0.006</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Significance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Correlation is significant at the .05 level (1 tailed)
** Correlation is significant at the .01 level (1 tailed)

Table 5.24 Spearman’s Rho Correlations between Students ‘A’ Level Results and Attendance at PS for Y2s split by MSE GCSE Quartiles.

Table 5.24 shows the correlations between ‘A’ level Science second year students’ ‘A’ level Chemistry and Biology results and their attendance at PS. It shows that the students who benefited from PS were from the higher ability ranges, as measured by
mean MSE GCSE scores. In ‘A’ level Chemistry there were significant positive correlations between the final grade and students’ attendance at PS in the top 50% of students, as measured by their mean MSE GCSE scores. However, as only 2 students who attended PS in the second year were in the bottom 25%, it is more of an issue of these students not attending rather than not benefiting from PS. In Biology it was only for the top 25% of students that there was a significant positive correlation between attendance at PS and their ‘A’ level grade.

5. Conclusion of whether Students who attended PS on Y2 performed better in their end of year exams than students who do not attend.

It can be concluded that Y2 PSUs, on average, performed significantly better in their Chemistry and Biology than non-PSUs. It can also be concluded that the more PS for Y2s students attended the better they performed in their ‘A’ level Chemistry and Biology. However, on Biology this was true only for the top 25% of students, measured by previous achievement. On Chemistry it was true of the top 75% of students. The qualitative evidence, although limited, also suggests that students gained from their attendance at PS for Y2s.

Thus it can be concluded that some students benefited from attending PS. However, not all students on Y2 benefited from PS. This was probably due to the fact that it was the students with higher levels of previous academic achievement who used PS. As I showed earlier this was due to the style of the PS sessions for Y2s.

5.6.3 Conclusion of whether Students who attend PS perform better in their end of year exams than students who do not attend.

There is clear evidence that in both PS schemes students who attend PS do significantly better than students who do not attend PS. The evidence suggests that PS helped to improve students’ academic achievement. The qualitative evidence supports this. This is very important. The statistical evidence is strong but there are many possible factors that have not been controlled for. For example, the students who attended PS could have been the more hard working or motivated students. How hard a student works is affected by many factors, for example how much time students
have available to study and their levels and types of motivation. Clearly these factors would both affect a students willingness to attend PS and their final grades. However, the triangulation of qualitative data from the PSUs and PSers and the quantitative evidence points to the conclusion that PS for Y1s and PS for Y2s improved students academic performance.

However, the schemes did not benefit the same types of students. On PS for Y1s, students benefited from PS at all levels of previous academic achievement. Whereas on PS for Y2s, it was the students with higher levels of previous academic achievement who used and benefited from PS. This was probably due to the fact that the PS sessions for Y2s were more formal, and were run by a more distant peer than the PS on Y1s. This made the sessions more attractive to students with higher levels of previous academic achievement.

The differences in the students who used and benefited from the two schemes, again shows how changes in the structure of PS schemes led to changes in their outcomes. The main difference between PS for Y1s and PS for Y2s, was the educational experience and style of facilitation of the PSers. This apparently small difference led to very different students using and gaining from the schemes.

5.7 Conclusion to Chapter Five

Peer Support on ‘A’ level Science was effective in improving students’ academic performance. This conclusion is based on the triangulation of the qualitative and quantitative evidence. There were gaps in the qualitative evidence and the statistical evidence on its own was inconclusive as not all factors that affect students performance could be controlled for. A major factor that was not controlled for was whether the students who attended PS were more motivated to achieve academically than the students who did not attend. However, the effect of PS can never be isolated from all the factors that influence students’ learning. PS is a small part of students educational experience and takes place in the wider context in which their learning takes place. It both is affected by that context, as has been shown by the different
responses from the students who were offered support, and effects that contexts through adding to the support that is available to students.

By triangulating the qualitative and quantitative evidence together a case was built up to suggest that attendance at PS had improved students' academic achievement. Which students benefited was effected by the structure of the scheme and the context in which it operated. This re-emphasises the importance of students and teachers designing and developing their PS schemes together that was shown in Chapter Four.

5.7.1 Analysis of Data

1. Qualitative Data
There were several problems with the scope of the qualitative data that was analysed. The problems arose from the lack of data relating to certain areas that were investigated. There was very little qualitative data on whether particular students attended PS. This was partly to do with the difficulty in collecting this data. More noticeably there was little qualitative data on PS for Y2s. This was due to the lack of time available to work with the PSer on this scheme. However, the students on Y2 could have been given the same questionnaire as the Y1 students, and an interview could have been conducted with the PSer. This would have allowed the same depth of qualitative information to be gathered on this scheme. Better qualitative evidence from the students offered support in this case study could have strengthened the evidence about how PS fitted with the context in which it operated and what effect this had on the operation and outcomes of the scheme.

2. Quantitative Data
The quantitative data was sound. The statistical tests that were used were appropriate. The use of control groups may have allowed more conclusive conclusions to be drawn. However, to do this would have altered the structure of PS, which was voluntary. Also, the failure of the PS for Chemistry, Physics, Pure and Applied Mathematics, and Computing, showed that particular PS structures can have different outcomes even within the same cohort of students. Finally, given the importance of context in peer learning that has been shown in this chapter, this would not have been
appropriate. To use a control group suggests that the control group would have changed in the same way as the experimental group given the same conditions. PS for Y1s showed this may not be the case.

### 5.7.2 Interpretation of Data

The approach adopted here was to build up a case on the effectiveness of PS by triangulating different types of evidence. This does not allow the exact effect of PS to be reported. For example, it cannot be said how many grades, on average, students will improve if they used PS. However, such a measurement would be misleading as it is not possible to control for all the factors that affect students’ learning as these factors interact and affect each other. I have shown that the outcomes of peer learning schemes are related to the context in which it is implemented. In different contexts peer learning schemes with identical structures would appeal to different students and would have different outcomes.

### 5.7.3 Conclusions and Recommendations

In this case study some important issues about peer learning schemes have been identified. First, peer learning schemes can be effective at supporting ‘A’ level students across the ability range in Further Education, and with a variety of approaches to learning. Second, peer learning schemes cannot be considered in isolation to the context in which they operate. They are affected by that context and also change that context. In this way any peer learning scheme needs to fit with the context in which it is to operate. Third, some of the factors that make up this context have been identified. These are the relationship between the students involved in the scheme, the peer facilitators and students to be offered peer learning, the academic disciplines being studied, and the methods of assessment on the course. I show in Chapter 6 the effect of the institutional context in which PS operated. Changes in these factors can lead to changes in the outcomes of peer learning. For example, on PS for Y2 a more educationally experienced PSer led the sessions. She led the sessions in a more formal way than was done on PS for Y1. These two factors resulted in students with higher levels of previous academic achievement using PS on
Y2, whereas on PS for Y1 students with all levels of previous achievement attended the sessions.

The issues identified in this chapter underline the importance of the approach taken to the implementation of peer learning. If these issues are to be considered in the design of peer learning, then the teachers, peer facilitators and students to be offered peer learning all need to be involved in shaping the scheme so that it fits with its context. This underlines the importance of the approach taken to the implementation to PS that was demonstrated in Chapter Three.
CHAPTER SIX: THE SIGNIFICANCE OF PEER LEARNING FOR TEACHING AND LEARNING

6.1 Introduction

6.1.1 Summary of the chapter's Argument

In this chapter I argue that peer learning has a wider significance for teaching and learning beyond that of the immediate effects of the individual schemes. The wider significance of peer learning for teaching and learning is that it can be seen as questioning the divisions that are made between the roles of the teacher and the roles of the learner. This questioning comes from the role of the peer facilitator, who facilitate the learning of others whilst learning themselves. In this way the role of the peer facilitator contains elements of the roles of teachers and learners, and can be seen to challenge the idea that some activities are the preserve of teachers and others of learners. In this chapter I argue that this division between teachers and learners activities inhibits learners’ ability to learn. However, peer learning, whilst revealing these differences, can also reinforce them in the division of the roles between peer facilitators and the students who are facilitated. These two groups of students benefit from peer learning in different ways. Finally, I show that peer learning is located within an institutional context, and this context will have an effect on the operation and outcomes of peer learning. This is because the institution's view of what is good practice in teaching and learning will inform the approaches taken in developing peer learning. Therefore, I conclude that the changes in approach to teaching and learning promoted by peer learning will only be sustained if they fit with the institutions’ view of what is good practice in teaching and learning.
6.1.2 The Structure of the chapter

I first set out the research questions that I have considered and summarise the different approaches to conceptualising teaching and learning that were outlined in my literature review.

Second, I demonstrate how peer learning can reflect the more traditional division between teacher and learners. I do this by examining the differing outcomes in the Peer Support (PS) scheme 1st year ‘A’ level Science students (Y1s). The Peer Support Users (PSUs) adopted significantly less meaning orientated approaches to learning after attending Peer Support (PS) sessions, whilst Peer Supporters (PSers) adopted significantly lower scores on two subscales that indicate a reproducing orientation to learning. I argue that the PSUs, adopting a traditional learning role, learned how to adapt to the assessment demands of the course but do not question their role as learners. They were motivated by a desire to pass their exams rather than a desire to develop as learners. In contrast, the elements of a teaching role that PSers took on led to them becoming more confident and aware learners.

Third, I argue that this new confidence came from a change in the way that PSers viewed their role as learners. The PSers repertory grids showed that there was a change in the way that they construed learning. They saw the roles as learners as including elements, which prior to their role as PSers, they saw as part of the role of teachers. In this way they took more responsibility for their learning and also saw learning as a more social process. However, their view of the role of teachers did not change.

Fourth, I argue that peer learning is bound to its institutional context in a number of ways. On PS for Y1s, the PSUs attended the sessions to help them to pass their exams, and this desire shaped their involvement in the sessions. Also, usually the only experience that students have of teaching is what their past and present teachers have done. Therefore, it is not surprising that they tend to see their teachers as the embodiment of teaching. Students’ views of teaching can only change when they
experience other ways of doing it. The college is committed to changing the ways in which students learn. Part of the college’s vision statement is to be part of a ‘Learning Revolution’. In the last section of this Chapter I examine the possible future development of peer learning through the Peer Support strategy through examining the institutional managers’ views of teaching and learning. I show how these informed not only their views of Peer Support, but offered two possible futures for the development of the college’s approach to teaching and learning. One will see new ways of learning introduced that will merely imitate traditional teaching, whilst the other will revolutionise the division of roles between teachers and learners, and in turn the experience of teaching and learning in the college.

6.2 Research Questions and the relationship between teaching and learning

This chapter examines the wider significance of peer learning for teaching and learning. I examined how the involvement of PSers and PSUs in the PS scheme for Y1s affected their approaches to studying, whether PSers constructs of teaching and learning changed over the time they were involved in PS, and the prospects for the development for Peer Support within the college. This work rested on a particular understanding of the relationship between the roles of teachers and learners. Therefore, having set out my research questions, I then explain my understanding of this relationship and how this differs from a traditional understanding of this relationship.

6.2.1 Research Questions

The research questions I examined were:

1. *Did involvement in Peer Support affect peer support users’ and peer supporters’ approaches to studying?*

2. *Did involvement in Peer Support affect peer supporters’ constructs of teaching and learning? How did peer supporters’ constructs of teaching and learning relate to their fellow students’ and teachers’ constructs of teaching and learning?*
3. Was there a link between institutional managers’ views of the roles of teachers and learners and their understanding of Peer Support? What are the prospects for the development of Peer Support within the institution?

6.2.2 Conceptualising the relationship between teaching and learning

As I argued in my literature review in Chapter Two (see Section 2.6), traditionally teaching and learning have been treated as two separate activities. To put it very simply, teaching has been seen as what the teacher does and learning what the learner does. This has lead to a view of teaching and learning in which it is the teacher’s job to present the learning material in whatever way they feel is appropriate, whilst the learner’s job is simply to learn this material. Thus the teacher’s role is, at least in part social, whilst the role of the learner is largely solitary. Such views are reinforced by notions of learning as deep and surface, or active and passive, which simply refer to learner’s engagement with the learning material rather than with each other or their teachers.

However, the role of the peer facilitator, in this case the PSer, involves helping others to learn and learning oneself. In this way they can be seen as teaching and learning at the same time. Whilst normally learners are seen to act purely for the benefit of themselves in learning and teachers act largely for the benefit of learners, PSers act for the mutual benefit of the PSUs and themselves. This integrates teaching and learning.

In this chapter I show the traditional division between teaching and learning at work, illustrating how Peer Support challenged elements of this division. I conclude that an institutional approach is needed if the division is to be overcome and evaluate the chances of this approach being adopted in the college’s ‘learning revolution’.
6.3 Peer Support and students' approaches to studying

6.3.1 Introduction to Peer Support and students' approaches to studying

In this section, I consider the following question:

1. Did involvement in Peer Support affect peer support users' and peer supporters' approaches to studying?

I examined the PSUs' and PSers' approaches to studying using Richardson's (1990) shortened version of the Approaches to Studying Questionnaire. The method used to distribute these questionnaires is set out in Sections 3.4.3 and 3.4.4. I show that the PSU's approaches to studying become significantly less meaning orientated over the time they were involved in PS for Y1s. I also show that the PSers' score on two of the subscales that indicate a reproducing orientation to learning become significantly lower over the time they were involved in PS for Y1s. I offer qualitative evidence to support the data from the ASQs of the PSers and PSUs.

The evidence that PSUs became less meaning orientated in their studies contradicts my suggestion in Section 3.4.3 that involvement in PS would help to increase these students' meaning orientation. This seemed to be due to the assessment demands of the course that encouraged students to adopt a strategic orientation to studying. The difference in the development of PSUs and PSers approaches to studying reflected the different types of benefits for peer facilitators and the students facilitated from their involvement in peer learning which was predicted in my literature review (see Section 2.6.2). This is due to qualitative differences in the roles of PSers and PSUs. The PSers had their horizons of what it means to be a learner broadened through taking on a role that is somewhere between that of a teacher and a learner. The PSUs remained in the traditional role of a learner and so their gains were more in terms of understanding how to succeed on their course. In this way the relationship between PSers and PSUs can be seen to reflect the traditional division between teachers and learners.
6.3.2 Peer Support Users’ approaches to studying

In setting out the effect that participation in PS for Y1s had on PSU’s approaches to studying, I show that the PSUs meaning orientation scores became significantly lower over time they were involved in PS. There was no significant change in their reproducing orientation, or the meaning and reproducing orientation of the Peer Support Non-Users (non-PSUs). In analysing these results I argue that the PSUs become more strategic learners as a result of their involvement in Peer Support. This was because it helped them to prepare for their end of year examinations. It did not appear to change their understanding of their roles as learners. I use evidence from the PSers interview to support this.

1. Results

Tables 6.1, 6.2, and 6.3 are based on the two ASQs that the Y1s completed. The first was completed in October 1997 before the Peer Support sessions began and the second in June 1998 after the students had taken their exams and the PS sessions had finished. Meaning and reproducing orientated scores were calculated in the same way as was set out in Section 5.5.2.

The tables show the results of a Wilcoxon Signed Ranks test. It is a non-parametric statistical test that is used to test pairs of related observations. It examines the distribution of differences between the scores of each pair observation; each pair is made up of the students pre and post-test score (Peers 1996 p. 230 - 236). A ‘negative rank’ means that the score in the pre-test measurement was greater than the score in the post test score, a positive ‘rank’ means that the post test score is greater that the pre-test score. Where there is no difference between score this is denoted by a ‘tie’.
### Table 6.1: The ranks of the differences between post and pre test scores on ASQ for Non-PSUs

<table>
<thead>
<tr>
<th>Post – Pre Meaning Orientation</th>
<th>Number</th>
<th>Mean Rank</th>
<th>Sum of ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative Ranks</td>
<td>7</td>
<td>9.57</td>
<td>67.00</td>
</tr>
<tr>
<td>Positive Ranks</td>
<td>10</td>
<td>8.60</td>
<td>86.00</td>
</tr>
<tr>
<td>Ties</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Post – Pre Reproducing Orientation</th>
<th>Number</th>
<th>Mean Rank</th>
<th>Sum of ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative Ranks</td>
<td>5</td>
<td>9.70</td>
<td>48.50</td>
</tr>
<tr>
<td>Positive Ranks</td>
<td>11</td>
<td>7.95</td>
<td>87.50</td>
</tr>
<tr>
<td>Ties</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 6.2: The ranks of the differences between post and pre test scores on ASQ for PSUs

<table>
<thead>
<tr>
<th>Post – Pre Meaning Orientation</th>
<th>Number</th>
<th>Mean Rank</th>
<th>Sum of ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative Ranks</td>
<td>14</td>
<td>8.46</td>
<td>118.50</td>
</tr>
<tr>
<td>Positive Ranks</td>
<td>3</td>
<td>11.50</td>
<td>34.50</td>
</tr>
<tr>
<td>Ties</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Post – Pre Reproducing Orientation</th>
<th>Number</th>
<th>Mean Rank</th>
<th>Sum of ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative Ranks</td>
<td>8</td>
<td>8.56</td>
<td>68.50</td>
</tr>
<tr>
<td>Positive Ranks</td>
<td>10</td>
<td>10.25</td>
<td>102.50</td>
</tr>
<tr>
<td>Ties</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 6.3: Test Statistics on the ranks of differences between post and pre test scores on the ASQ for non-PSUs and PSUs

<table>
<thead>
<tr>
<th></th>
<th>Post - Pre Meaning</th>
<th>Post - Pre Reproducing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-PSUs</td>
<td>Z = -.451</td>
<td>Z = -1.010</td>
</tr>
<tr>
<td></td>
<td>p-value (.652)</td>
<td>p-value (.313)</td>
</tr>
<tr>
<td>PSUs</td>
<td>Z = -1.992</td>
<td>Z = -7.41</td>
</tr>
<tr>
<td></td>
<td>p-value (.046)</td>
<td>p-value (.459)</td>
</tr>
</tbody>
</table>
The tables show that the PSUs score for meaning orientation fell significantly between the pre and post-test. This is demonstrated by the fact there are more negative ranks on PSU’s meaning orientation than positive ranks, which shows that the majority of PSUs meaning orientation scores were higher in the first ASQ. The test statistics show that this difference is significant (p≤0.5)8. There are no significant differences between the pre and post-test reproducing orientations for the PSUs and in either the scores for the non-PSUs.

In order to understand the reason for the significant change in the PSUs scores, I examined the PSUs scores on each of the sub-scales that make up the measurement of their attitudes to studying. The factors, as characterised by Ramsden & Entwistle (1981), which in Richardson's (1990) questionnaire make up the Meaning Orientation and Reproducing Orientation, are set out in Table 6.4. In the questionnaire each sub-scale is measured by a series of questions.

<table>
<thead>
<tr>
<th>Sub-scale</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meaning orientation</strong></td>
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</tr>
<tr>
<td>Deep Approach</td>
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</tr>
<tr>
<td>Comprehension Learning</td>
<td>Readiness to map out subject areas and think divergently</td>
</tr>
<tr>
<td>Inter-Relating Ideas</td>
<td>Relating to other parts of the course</td>
</tr>
<tr>
<td>Use of Evidence</td>
<td>Relating evidence to conclusions</td>
</tr>
<tr>
<td><strong>Reproducing Orientation</strong></td>
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</tr>
<tr>
<td>Surface Approach</td>
<td>Preoccupation with memorisation</td>
</tr>
<tr>
<td>Improvidence</td>
<td>Over-cautious reliance on details</td>
</tr>
<tr>
<td>Syllabus-Boundness</td>
<td>Relying on staff to define learning tasks</td>
</tr>
<tr>
<td>Fear of Failure</td>
<td>Pessimism and anxiety about academic outcomes</td>
</tr>
</tbody>
</table>

Table 6.4: Sub-scales in Richardson’s (1990) Approaches to Studying Questionnaire

Tables 6.5, 6.6, and 6.7 set out the Wilcoxon Signed Ranks test for each of the sub-scales for the PSUs and non-PSUs. Table 6.6 and 6.7 show that there is a significant fall in the PSUs Deep Approach scores between the pre and post tests. There is no similar fall in the Deep Approach scores of the non-PSUs. Therefore, given that the

---

8 I used a two-tailed p-value to test the significance of changes in the participants’ meaning and reproducing orientations because in my research question I did not suggest a direction for the change. However, in the test of the subscales of these orientations I use a one tailed p-value because the direction of the change had been identified from the test for the change in the meaning and reproducing orientations.
populations of PSUs and non-PSUs were found to be not significantly different in Chapter 5, the most likely reason for this difference appears to be the PSUs’ attendance at Peer Support.

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</thead>
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<tr>
<td>Total</td>
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</tr>
<tr>
<td>Post - Pre Comprehension Learning (CL)</td>
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<td>Post - Pre Use of Evidence and Logic (UE)</td>
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<tr>
<td>Post - Pre Im providence (IP)</td>
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<td></td>
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</tr>
<tr>
<td>Post - Pre Fear of Failure (FF)</td>
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<tr>
<td>Negative Ranks</td>
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<tr>
<td>Total</td>
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</tr>
<tr>
<td>Post - Pre Syllabus – Boundness (SB)</td>
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Table 6.5: The ranks of the differences between post and pre test sub-scale scores on ASQ for Non-PSUs
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<th>Number</th>
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<tr>
<td>Total</td>
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<td></td>
</tr>
<tr>
<td><strong>Post – Pre Comprehension Learning (CL)</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>Post – Pre Relating Ideas (RI)</strong></td>
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<td>Negative Ranks</td>
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<tr>
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<td></td>
</tr>
<tr>
<td><strong>Post – Pre Use of Evidence and Logic (UE)</strong></td>
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<td>Total</td>
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<td></td>
</tr>
<tr>
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<tr>
<td><strong>Post – Pre Improvidence (IP)</strong></td>
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<tr>
<td>Total</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Post – Pre Fear of Failure (FF)</strong></td>
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<tr>
<td><strong>Post – Pre Syllabus – Boundness (SB)</strong></td>
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<tr>
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Table 6.6: The ranks of the differences between post and pre test sub-scale scores on ASQ for PSUs

<table>
<thead>
<tr>
<th>DA</th>
<th>CL</th>
<th>RI</th>
<th>UE</th>
<th>SA</th>
<th>IP</th>
<th>FF</th>
<th>SB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-PSUs</td>
<td>Z</td>
<td>-1.64</td>
<td>-1.76</td>
<td>-1.37</td>
<td>-3.90</td>
<td>-2.80</td>
<td>-1.59</td>
</tr>
<tr>
<td></td>
<td>p – value (2-tailed)</td>
<td>.102</td>
<td>.954</td>
<td>.07</td>
<td>.170</td>
<td>.697</td>
<td>.77</td>
</tr>
<tr>
<td>PSUs</td>
<td>Z</td>
<td>-2.57</td>
<td>-1.17</td>
<td>.00</td>
<td>-1.26</td>
<td>-1.388</td>
<td>-1.00</td>
</tr>
<tr>
<td></td>
<td>p – value (2-tailed)</td>
<td>.01</td>
<td>.241</td>
<td>1.00</td>
<td>.208</td>
<td>.181</td>
<td>.31</td>
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</table>

Table 6.7: Test Statistics on the ranks of differences between post and pre test sub-scale scores on the ASQ for Non-PSUs and PSUs
2. Analysis of the results

The results presented above raise the question of why students who attended PS on Y1 would have taken an approach to learning that is less questioning of their learning. This is a particularly interesting question given my prediction in Section 3.4.3 that PSUs would become more meaning orientated in their learning.

It seems likely that the students were taking a strategic approach to their learning. Entwistle (1997) describes this as an “intention to achieve the highest possible grades, while the process depended on cue seeking, well organised study methods and effective time management” (p.19). It was support in these areas that the PS sessions focused on. The PSers, in their group interview, felt that they had helped the PSUs to become aware of how to approach the course and how to tackle past exam papers. It appears that they were helping the PSUs to understand the cues of their teachers and the assessment methods:

“Luqman: They did not have much of an idea about the syllabus...
Ola: At first they didn’t really ask us for past papers but once they knew what Peer Support was they knew they could come and ask us for past papers.
Nazia: And the ones that came to Peer Support, they seemed to be the ones who studied more out of the first years. They all used the past papers and we told them what books to use and everything . . .
Ola: I think it helps their independence, being like learning on their own.
Nazia: A lot of them just depend on what they are taught in class and we told them ‘You have to read it yourself, you can’t just depend on that because they touch on a topic and they expect you to read it’ because they didn’t realise.
Shaminder: I hoped they would not have experienced some of the mistakes that we made, some of the things we went through and did not realise when we were doing our course. Perhaps if they had the experience we had they wouldn’t repeat the same sort of thing that we did but would approach the course in a different way.
Paul: How did you hope they would approach the course?
Shaminder: Working at the same pace throughout the two years, not just at the examination period and also working independently so that you’ve done everything beforehand and when it’s being taught in class it makes understanding so much easier.”
If the PSUs became very focused on using exam papers and the books that the PSers recommended then it seems likely that they became less questioning in their approach to the course. Their promotional exams, as with the actual ‘A’ level exams, had question topics and formats that were repeated over the years. This meant that the course could be successfully approached by learning to tackle the types of questions that would be set in an exam rather than seeking a deep understanding of the course content. The results in Chapter Five, show that the PSUs did indeed do better than the non-PSUs in their end of year exams.

The question arises whether it is better for students to get better grades in a subject or to have more questioning approaches to their learning in that subject. The answer given to this question will be informed by the view that is taken on students. First, it should be noted that the PSUs did not take a significantly more reproducing orientation to their learning. Second, if students are seen as ‘personal scientist’ (Kelly 1955) who take rational decisions based on their understanding of the situation they find themselves in, then for them to adopt an approach that will secure success in exams at the cost of deeper learning appears to be acceptable. This focus on exams was emphasised by one of the PSers in the interview when he was comparing Peer Support with teaching.

“Shaminder: Talking amongst yourselves develops ideas you need something to trigger it off and that’s usually teachers themselves. You need that introduction, you need that background. You need to know what you are doing before hand; you can’t just talk anything. You’ve got to relate it back to the syllabus, related back to work. At the end of the day you’re doing your exams you’re not discussing.”

This brings us back to the one of the central ideas of this chapter. Peer learning is rooted to the context in which it operates. If the end of year exam discourages students to take a questioning approach to their learning, then peer learning schemes will help students to understand this and to become less questioning. This view is supported by the evidence in Chapter Five that the PSUs of PS for Y2s had more surface approaches to studying and higher promotional exam results in their first year than the non-PSUs.
6.3.3 Peer Supporters' approaches to studying

I show how the PSers' approaches to studying changed over the time they acted as PSers. I show that their scores on two of the subscales of a reproducing orientation to learning fell significantly over the time they acted as PSers. There was further evidence for the change in the PSers' reflections on the benefits of being a PSer in the group interview. The experience of being a PSer increased their confidence in discussing ideas and increased their understanding of the subject.

1. Results

As with the students who were offered PS on Y1, the PSers, who were second year 'A' level Science (Y2) students, completed the ASQ twice, once before they started as PSers, and once after they had stopped being a PSer. I again used the Wilcoxon Signed ranks test to examine whether the PSers' scores had changed over time. As is shown in Tables 6.8 and 6.9, the PSers' meaning and reproducing orientation scores did not change significantly over the time that they were PSers. However, it should be noted that the PSers' meaning orientation scores increased, whilst their reproducing orientation scores decreased. This is very different to what happened to the PSUs, whose meaning orientation scores fell and their reproducing orientation scores increased.

<table>
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<td></td>
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</table>

<table>
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<tr>
<td>Total</td>
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Table 6.8: The ranks of the differences between post and pre test scores on ASQ for Psers
In examining the sub-scales of the meaning and reproducing orientations, as shown in Tables 6.10 and 6.11, I found that there were significant differences in the PSers Improvidence and Fear of Failure scores.
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<td></td>
<td></td>
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<tr>
<td><strong>Post - Pre Deep Approach (DA)</strong></td>
<td>Negative Ranks</td>
<td>2</td>
</tr>
<tr>
<td></td>
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<td>Ties</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>7</td>
</tr>
<tr>
<td><strong>Post– Pre Comprehension Learning (CL)</strong></td>
<td>Negative Ranks</td>
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<td>Positive Ranks</td>
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<td></td>
<td>Ties</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>7</td>
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<tr>
<td><strong>Post - Pre Relating Ideas (RI)</strong></td>
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<td></td>
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<td></td>
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<td>2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
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<td></td>
<td>Positive Ranks</td>
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<td>Ties</td>
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<tr>
<td></td>
<td>Total</td>
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<td></td>
<td>Positive Ranks</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Ties</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>7</td>
</tr>
<tr>
<td><strong>Post - Pre Syllabus – Boundness (SB)</strong></td>
<td>Negative Ranks</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Positive Ranks</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Ties</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 6.10: The ranks of the differences between post and pre test sub-scale scores on ASQ for Psers

<table>
<thead>
<tr>
<th>Psers</th>
<th>DA</th>
<th>CL</th>
<th>RI</th>
<th>UE</th>
<th>SA</th>
<th>IP</th>
<th>FF</th>
<th>SB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Z</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>p - value</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-.27</td>
<td>-.67</td>
<td>-.70</td>
<td>.00</td>
<td>-.652</td>
<td>-1.841</td>
<td>-1.80</td>
<td>-.577</td>
</tr>
<tr>
<td></td>
<td>.39</td>
<td>.246</td>
<td>.240</td>
<td>.50</td>
<td>.291</td>
<td>.033</td>
<td>.035</td>
<td>.282</td>
</tr>
</tbody>
</table>

Table 6.11: Test Statistics on the ranks of differences between post and pre test sub-scale scores on the ASQ for Psers

Improvidence, as was illustrated in Table 6.4, is characterised by an ‘over-cautious reliance on details’ rather than seeking an overall picture. Fear of Failure is
characterised by ‘pessimism and anxiety about academic outcomes’ that leads to panicking in exams, a fear of speaking in tutorials, and fears about the pressure of work.

2. Analysis of Results
In their group interview the PSers spoke about the experience of being a PSer in a way that supports this evidence from the ASQ. In response to the question “How did being a PSer help you?” The PSers gave the following response:

“Shaminder: I think it’s made us more confident, talking in front of class, talking to people. I think before that I was rather shy.
Nazia: It has helped us revise as well. If we know we’ve got to do a certain topic it makes us read up on it because we might have not done it since the first year and so it helps with that.
Luqman: Also it’s easier to talk about something in a group of strangers it makes it easier making your point and you feel more confident.
Shaminder: Also we may have learnt a few things from the students themselves.
Nazia: Yeah.
Shaminder: There are some things you didn’t pick up when you were in the first year and some things they do when they come up with questions which triggers something of and helps you as well.
Luqman: When you are studying a topic by yourself you can only look at things in a certain number of ways whereas they have their own ideas and helps you understand as well.”

These answers focus directly on aspects of Fear of Failure and Improvidence. They focus on confidence in discussing ideas as well as revising and increasing their understanding of the subject.

6.3.4 Differences in the changes of Peer Supporters and Peer Support Users approaches to studying
There are differences in what PSUs and PSers gained from PS on Y1. The PSUs achieved higher marks than their peers and developed significantly less meaning orientated approaches to studying, whilst the PSers gained significantly lower scores on Improvidence and Fear and Failure, which are aspects of a reproducing orientation. This difference suggests that their involvement in Peer Support was qualitatively different, that their roles were qualitatively different. The PSUs gained
information about how to tackle the course, an insight into understanding the cues from their lecturers, the syllabus and past exam papers. The PSers seemed to have their horizons of their learning broadened through the facilitation of the learning of others.

For example, Luqman reported in the interview that in helping other students he had helped himself:

"Luqman: When you studying a topic by yourself you can only look at things in a certain number of ways whereas they have their own ideas and helps you understand as well."

Luqman expanded on this in his personal answers to the questions:

"I think that each session was also very productive for me. It made me understand my work. If I was to study a topic by myself, there is a limited number of ways that I can look at that topic to understand it whereas with the students they all had their own ways of looking at it... If I have a problem (study related) I can break it down and make it easier for myself to understand. I find it easier to work with people that I might have never met before. I feel more confident if I have to make a point in front of a person / people."(From Luqman’s written answers to the interview questions)

Shaminder explained how his view of learning had broadened through the experience of being a PSer:

"I used to think that teaching was the only way to learn. Since Peer Support I have seen that there are a variety of other ways of learning which sometimes can be more useful" (Shaminder’s written answers to the interview questions).

This difference in outcomes for the PSers and PSUs seemed to have something to do with the different roles that the PSers and PSUs had in the sessions. It was the PSers responsibility to organise materials for the sessions, and to lead the discussion, this means that they had a role that contained elements that are traditionally the preserve of teachers. However, part of their motivation for running the sessions was to develop their own understanding of the subject matter. As Nazia put it:

Nazia: It has helped us revise as well. If we know we’ve got to do a certain topic it makes us read up on it because we might have not done it since the first year and so it helps with that... Teaching itself helps you to learn. I felt
that any way. If you are explaining something to someone it helps you learn it because you obviously cannot teach someone if you don’t know it yourself. In the sessions you could let them just discuss things as people might come up with things that you might not have thought of and if you talk to someone about it you are more likely to remember it than if you are just read it in a book. The classes are too big for the teachers to do it. There are always people chatting and can’t get everyone’s attention if they are so big.

In this way the PSers took on a role that is somewhere between a teacher and a learner, and it is this that broadened their horizons of what it means to be a learner which I demonstrate in Section 6.4.

6.3.5 Conclusions from Peer Support and students' approaches to studying

In this Section I have shown that through their involvement in PS on Y1, the PSUs became significantly less meaning orientated in their approaches to studying, whilst the PSers gained significantly lower scores on two subscales of the reproducing orientation to studying.

The change in the PSUs’ approaches to studying contradicts my prediction in Section 3.4.3 that peer learning could help students to develop more meaning orientated approaches to studying. I have shown that this indicates that peer learning is rooted to the context in which it operates, and that if the assessment demands on a course encourage students to become less meaning orientated then peer learning schemes will reflect this.

The difference in the changes in the approaches to studying of the PSUs and PSers showed how they had qualitatively different roles in the PS sessions. The PSUs remained in the role of a learner, whilst the PSers’ role had elements of the role of a teacher and a learner and this helped them to become more confident in their learning. In this way, PS on Y1 can be seen to have reflected a traditional divide between the roles of teachers and learners. However, in the next section I show how PSers views of the roles of learners changed as a result of their involvement in PS.
6.4 Peer Support and its effects on Peer Supporters’ Constructs of Teaching and Learning

6.4.1 Introduction to Peer Support and its effects on Peer Supporters’ Constructs of Teaching and Learning

In this Section I consider the following research questions:

2. Did involvement in Peer Support affect peer supporters’ constructs of teaching and learning? How did peer supporters’ constructs of teaching and learning relate to their fellow students’ and teachers’ constructs of teaching and learning?

Repertory grids were elicited from three groups of participants. These were the PSers from PS on Y1 who were Y2 students, three other Y2 students who the PS link-teacher felt could have acted as PSers but were not selected (from now on referred to as ‘non-PSers’) and the full-time members of teaching staff on ‘A’ level Science. Two grids were completed with PSers and non-PSers, and a single grid with the ‘A’ level Science teachers (see Research Design Section 3.4 for a fuller explanation).

I first show the different ways in which I analysed these grids. The method of analysis that produced the most interesting results was to examine the changes in the constructs that were rated as important in teaching and in learning. I show that in their grids the teachers tended to rate constructs relating to expectations of the self as important in learning and constructs relating to interaction with others as important in teaching. This was also true for the two grids of the non-PSers. However, the analysis of the grids showed that the PSers changed their view of what was important in good learning. In the second grid there was an increase in the number of constructs relating to interaction with others that the PSers ranked as important in learning. I argue that this shows that the role of PSer had helped the PSers to develop a more social view of learning. The views of the PSers on what was important in teaching had not changed. They largely remained the same as the grids of the non-PSers and the teachers. I argue that these changes suggest that whilst being a PSer changes students’ views of what it means to be a learner, it does not change their views of what it means to be a
teacher. I argue that this is because their views on teaching are defined by activities of
their teachers which tend not to be changed by Peer Support, whilst their views on
learning change as a result of the changes in their activities as learners.

6.4.2 The analysis of the repertory grids

The grids were elicited in the way described in Section 3.4.4. I analysed the grids
using a computer programme called RepGrid (Center for Person-Computer Studies
1990). This programme will FOCUS and SOCIO each grid. FOCUSing a grid
reorders the elements (in this case the teachers and learners) and the constructs of that
grid so that there is the least difference between the ratings of any two adjacent
constructs and any two adjacent elements. SOCIO shows the similarity between two
or more grids where both grids contain at least the same elements (Centre for Person-
Computer Studies 1990). I have used this to compare the two grids of each PSer and
non-PSer.

The repertory grids were elicited from the PSers, non-PSers and teachers in order to
examine the extent to which PSers’ constructs of teaching and learning changed over
the time they were PSers and compared with the non-PSers. Any changes were to be
placed in the context of the grids elicited from the ‘A’ level Science teachers. I
analysed the grids in several ways. First, I examined whether there was a change in
the participants’ ratings of their constructs and elements between their two grids.
Second, I examined whether the teachers and learners in each of the grids were
grouped together in particular ways. Finally I considered the participants’ ranking of
their constructs in terms of their importance in teaching and learning. It was this last
methods of analysis which showed a difference between the PSers and non-PSers and
I shall explain this method of analysis in the greatest detail. I show how this led me to
analyse the participants’ constructs in terms of those that referred to expectations of
oneself and those that related to expectations of others.
1. Methods of analysis which showed no differences between the Peer Supporters’ and non-Peer Supporters’ repertory grids

First, I examined whether there was a change in the ratings of the constructs or the elements. In particular I was interested to see if there were any common changes in the ratings that the PSers had given themselves as students, as PSers and their ideal selves. I was also interested whether there were any changes in the PSers ratings of particular constructs. Whilst there were changes in individual grids, there was no consistent pattern across the repertory grids of the PSers or the non-PSers. A comparison between the two grids is illustrated in Figure 6.1. This shows there were no great changes in the ratings of the elements and constructs in the grid.

Figures 6.2 and 6.3 show the two grids of one PSer. In comparing the grids of a single PSer or non-PSer, I was looking to see if there was a change in the position of elements and constructs. Across all of the PSers grids there was little change in the position of the elements in relation to each other. There were also no consistent changes in the position of the PSers as learners, PSers and their ideal selves. Finally, I examined whether there was a shift in the relationship between the groups of teachers and learners. In the two grids of each of the PSers and non-PSers, the teachers and learners were grouped by the participants’ view of how good they were as teachers and learners. I could tell this because the participants had given each of the elements...
on their grid a mark out of 10 for how good they felt they were as teachers or learner (10 out of 10 being the highest mark). I had used these marks to assign the teachers and learners numbers of the grid. Teacher 1 was the highest rated teacher and Learner 1 the highest rated learner. In the participants’ grids I found that the good teachers and good learners tended to be grouped together. This suggested that a good teacher and good learner were seen as fairly similar when judged by the participants’ constructs.

Figure 6.2 A PSer’s first repertory grid which has been focused
2. Analysing participants' ranking of the importance of constructs in teaching and in learning

The final element, which I considered, was the ranking of each construct for its importance in teaching and learning. It was in examining this element of the grids that I found a difference in the grids of the PSers and non-PSers. In the majority of the first grids of the PSers and non-PSers, and the grids of the teachers, more constructs were ranked as important in teaching than in learning. In the second PSer grids there was an increase in the number of constructs that were seen as important in learning. There was no similar change in the non-PSer grids.

The constructs that were seen as important in learning in the second of the PSers' grids, and not the first, were those relating to interaction with others, rather than expectations of the self. During the elicitation of the participants' grids, I had asked them to define each of their poles of their constructs and took verbatim notes of this. This allowed me to analyse the constructs in depth. In doing this I found that there were two kinds of constructs. Those that related to how people interact with others
(other) and those that are related to people’s expectations of themselves (self). For example Luqman’s constructs, his descriptions of them, and my subsequent categorisation, are shown in Table 6.12. Table 6.12 shows how I have divided them between expectations of the self and interaction with others based on his descriptions of them. It is interesting that one of the each of the poles of the last two constructs refer to expectations of the self, and the other to interaction with others, and that Luqman puts teachers on the relating to others side and learners on the relating to your self. I have put these in the ‘other’ category, as the relating to self side is more about not interacting with others than doing something that relates to your self. The participants’ descriptions of the constructs were essential, as often it was not clear whether the construct referred to interactions with others, or expectations of the self until these descriptions were examined. I went through this process with each of the PSers’ grids, the grids of the non-PSers, and the teachers’ grids and found that the same distinction between the two types of constructs could be made. After categorising the constructs of the grids, I found that those constructs relating to interacting with others tended to be grouped together, as did those constructs relating to people’s expectations of themselves. This suggested that the categorisation had grouped similar constructs and had not just produced an arbitrary division.
<table>
<thead>
<tr>
<th>Construct</th>
<th>Description</th>
<th>Self or Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft and Inspiring vs. Authoritative</td>
<td>‘Authoritative’ is tense, stuck up, moody. You are always afraid of being told off. ‘Soft and Inspiring’ is the opposite. They have a smile on their face, their manner would be gentle and encouraging. If you go to them with a problem, you can fully describe what the problem is.</td>
<td>Other. It is based on how people interact with other people</td>
</tr>
<tr>
<td>Nervous-'Unsure' vs. Calm and Relaxed.</td>
<td>‘Nervous and Unsure’ people are hard to understand. Calm and relaxed people are easy to approach, confident, encouraging and inspiring.</td>
<td>Other. It is based on how people interact with other people</td>
</tr>
<tr>
<td>Understanding not kind vs. Understanding and kind</td>
<td>‘Kind and Understanding’ teachers go out of their way for students. They are more interested in students and ask them if they have a problem rather than waiting for them to come up to them. ‘Understanding not Kind’ people just do the absolute essentials, they are just doing their job. If you have a problem they will say there is nothing they can do about it.</td>
<td>Other. It is based on how people interact with other people</td>
</tr>
<tr>
<td>Complacent vs. High aims / standards</td>
<td>Students who are really good still strive for perfection. They want to do even better. ‘Compliant’ teachers do not want to teach more than is necessary - they see it as a waste of time.</td>
<td>Self. It is based on people’s expectations of themselves</td>
</tr>
<tr>
<td>Unexciting vs. Exciting / Funny</td>
<td>‘Exciting’ people makes learning much easier because some people consider learning a burden. It shouldn’t be like that. ‘Exciting’ teachers get a better response from students. ‘Unexciting’ students usually get good results.</td>
<td>Other. It seems to be about how much people interact with others.</td>
</tr>
<tr>
<td>Tense, serious vs. Easy going</td>
<td>‘Easy going’ people tend to have more friends. They get on better with people. ‘Easy going’ teachers are bad as students think it’s a joke. You need to show them you mean business. An easygoing student may waste time but if others appreciate it, then it encourages you to carry on. ‘Tense and serious’ people are not good for your own self. It affects your own learning as it is always on your mind.</td>
<td>Other. It seems to be about how much people interact with others.</td>
</tr>
</tbody>
</table>

Table 6.12: A PSers description of his constructs and how they were subsequently categorised.

I have shown how I analysed the participants’ grids in terms of whether these constructs referred to the expectations of the self and interaction with others. I now show the results of this analysis of the grids of the teachers, the PSers and the non-PSers.

215
6.4.3 Results from the analysis of repertory grids

1. The teachers’ ranking of the constructs important in teaching and the constructs important in learning

I present the teachers’ ranking of which of their constructs were important in teaching and in learning first, as this provides a context in which to understand the rankings of the PSers and non-PSers.

Table 6.13 sets out number of constructs of the teachers and which of these were ranked as important in teaching and learning. The three columns under ‘Constructs in Grid’ is the total number of constructs that were elicited and how many of these related to expectations of the self and how many to interacting with others. The second part shows how many of these ‘self’ and ‘other’ constructs were ranked as important in teaching and how many ranked as important in learning in the grids first and second grids.

<table>
<thead>
<tr>
<th>Number of Constructs in Grid</th>
<th>Total</th>
<th>Self</th>
<th>Others</th>
<th>Self</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher 1</td>
<td>7</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Teacher 2</td>
<td>8</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Teacher 3</td>
<td>12</td>
<td>5</td>
<td>7</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Teacher 4</td>
<td>10</td>
<td>4</td>
<td>6</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Teacher 5</td>
<td>10</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 6.13: The number of constructs elicited from each ‘A’ level Science teacher divided into those relating to self and those relating to others and how many were ranked as important in teaching and learning in the two grids.

In Table 6.13 there is not a particularly stark contrast between the importance of constructs involving interaction with others, and constructs relating to expectations of the self, in teaching and in learning. Teachers 2, 4, and 5 have the same number of each type of construct important in both teaching and learning. However, the contrast is evident if one examines the rankings of the constructs. For example, taking the three most important constructs of each of the teachers would give fifteen constructs
for teaching and fifteen constructs for learning. Out of the fifteen constructs for teaching nine related to interacting with others, whilst six related to expectations of the self. Out of the most important constructs in learning, three of the constructs related to interacting with others, whilst twelve related to expectations of the self. This difference supports the argument that the teachers see teaching largely as an activity that involves interaction with others with a lesser element of expectations of the self. In contrast, learning is seen as an activity that is mainly related to expectations of the self, and, given that interaction with others is seen as relatively unimportant, it is also an activity that is done alone.

2. The Peer Supporters' and non-Peer Supporters' ranking of the constructs important in teaching and the constructs important in learning

The PSers' and non-PSers' first grids reflected the grids of their teachers in terms of the division between the roles of the teachers and the learners. Learners were construed as being mainly concerned with expectations of the self. However, in their second grids the PSers ranked more constructs relating to interaction with others as important in learning. There was no similar change in the non-PSers ranking of the constructs.

Table 6.14 shows that for the PSers of the sixteen constructs that relate to expectations of the self, nine were ranked as important in teaching and fourteen were ranked as important in learning. Whilst for the thirty-five constructs relating to interacting with others, fifteen were seen as important in learning and thirty were seen as important in teaching. In terms of each of the PSers three most important constructs in teaching and in learning, five constructs related to expectations of the self and thirteen to interaction with others in teaching and ten related to expectations of the self and eight to interaction with others in learning.
Table 6.14: The number of constructs elicited from each PSer divided into those relating to self and those relating to others and how many were ranked as important in teaching and learning in the two grids.

Table 6.15 shows a similar pattern for the non-PSers. With seventeen out of eighteen constructs relating to expectation of the self being ranked as important in teaching and eighteen in learning, and eighteen out eighteen of constructs relating to interaction with others being ranked as important in teaching and eleven important in learning. In terms of the non-PSers three most important constructs in teaching and in learning, in teaching two related to expectations of the self and seven to interaction with others, whilst in learning six related to expectations of the self and three to interaction with others.

Table 6.15: The number of constructs elicited from each non-PSer divided into those relating to self and those relating to others and how many were ranked as important in teaching and learning in the two grids.

Tables 6.14 and 6.15 also show the number of constructs that were ranked as important in teaching and learning in the second grids. Tables 6.16 and 6.17
summarise the difference between the grids of each PSer and non-PSer. These show how for the PSers there was an increase in the number of constructs that related to interaction with others that were ranked as important in learning. There was not a comparable change in the rankings of what was important in learning for the non-PSers. There was not a general change in what was considered important in teaching by the PSers and non-PSers. These results are supported by the change in the PSers’ three most important constructs in learning. Those relating to interaction with others in the PSers’ three most important constructs in learning increased from eight to ten. There was no change in the number of constructs relating to the self and the number relating to interaction with others in the PSers’ three most important constructs in teaching. There was also no change in the make up of the three most important constructs in teaching and in learning of the non-PSers.

<table>
<thead>
<tr>
<th>Self</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>Learning</td>
</tr>
<tr>
<td>Nazia</td>
<td>+1</td>
</tr>
<tr>
<td>Shaminder</td>
<td>0</td>
</tr>
<tr>
<td>Jyothy</td>
<td>0</td>
</tr>
<tr>
<td>Tolu</td>
<td>0</td>
</tr>
<tr>
<td>Luqman</td>
<td>0</td>
</tr>
<tr>
<td>Ola</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 6.16: The change in each PSers grids in the constructs that were ranked as important in teaching and learning divided between those relating to self and others.

<table>
<thead>
<tr>
<th>Self</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>Learning</td>
</tr>
<tr>
<td>Juliette</td>
<td>0</td>
</tr>
<tr>
<td>Joanne</td>
<td>0</td>
</tr>
<tr>
<td>Ali - Riza</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 6.17: The change in each non-PSers grids in the constructs that were ranked as important in teaching and learning divided between those relating to self and others.

6.4.4 **Analysis of results from the repertory grids**

The results from the analysis of the grids of the teachers, PSers, and non-PSers suggests that the experience of being a PSer changed students’ views of what is
important in learning. It suggests that the PSers began to see interaction with others as a more important element of their learning. In this way they can be said to have developed a more social and complex view of the role of learners.

However, PSers’ views of what is important in teaching did not change. They generally saw the role of a teacher being focused on interaction with others rather than being as focused on expectations as the self. In this way they seem to mirror the views of their teachers.

The interview with the PSers supported the idea that there was a change in their understanding of what was important in learning, whilst there was no general shift in their understanding of what was important in teaching. However, one PSer did show a view of teaching that saw it connected with the process of learning,

The broadening of the PSers’ views of learning was shown in section 6.3.2. The PSers seemed to have developed a clear view that learners had a great deal of responsibility for their own learning, as this extract from the discussion shows:

Nazia: You’ve got to take responsibility yourself... When you do ‘A’ levels I didn’t realise how much of the work you’ve got to do yourself. Maybe at school you were perhaps spoon-fed you’ve got to do a lot here yourself. You can’t leave everything to the teachers here; you’ve got to do a lot of it yourself.
Shaminder: I think it was the second year when one of our teachers unexpectedly left it made us think oh my god we can’t just rely on him now. He’s gone and that’s it, you’ve got to do everything yourself. We were so used to his way of teaching and that’s what you expect and then you don’t get it.
Ola: If the teachers actually enjoy what they are doing it is easier for them to teach, and the students must go back and do the work. If want to learn you should be ready to enjoy whatever you are going to learn.

However, they do not seem to develop this view to critique their teachers’ approaches to teaching. Teaching seems to be defined by what the teachers do, and as such is not open to criticism. They appeared to see teaching and learning as very separate. For example, Shaminder spoke about the relationship between teaching and learning.
Teaching is seen as what the teacher does, and this is unquestioningly defined as 'dishing out knowledge'. Learning is seen as far more complex. In the discussion Shaminder gives a simple definition of learning, but then this is modified as he takes part in the discussion. I have extracted and collated some of his contributions to the discussion.

“Paul: If I was to say define teaching?
Shaminder: Giving out knowledge... Learning's taking it in, I would say there are only limited ways of teaching but different ways of learning. At the moment I think the only way of teaching is the teacher at the front, writing everything down. At the moment that's the only way of teaching. Learning there's different ways, taking it down from the teacher obviously, talking to your friends, there's independent learning, there's computers and things like that... I think (Peer Support and teaching) work well together. I think you should have a teacher dishing out the knowledge writing on the board and at the same time there should be a time where you can talk amongst students themselves. Have a little group where you can go over a topic and talk about it, read it and work together...Having a teacher at the front is a must...Learning is not about taking in facts it's about relating it.”

Some of the PSers did see a clear link between teaching and learning, but this was expressed in terms of learning through teaching rather than a critique of the way in which teaching is practised:

“Luqman: I think you’ve got a teacher who enjoys teaching, they don’t do it to earn a living but they do it so they get more and more experience each day and every time they teach a new student they’re better and more confident at it. I think teaching itself is learning.”

“Teaching is more explaining the theory and all the principles involved, whereas to learn you must do a lot of reading yourself and try to understand the work. I think teaching is one of the best forms of learning, as to be able to teach properly you must understand the work” (Nazia from her written responses to the interview questions).

For the other PSers, and for the non-PSers and teachers, there seemed to be a stark division between the roles of teachers and learners. It was not that they saw teachers and learners as very different, in fact on their repertory grids good learners and teachers were closely linked together. It was rather that they appeared to see teachers and learners having very different responsibilities. Learning appeared to be primarily
about expectations of oneself and working alone, whilst teaching was seen by contrast as an activity focused on interaction with others.

6.4.5 Conclusions to Peer Support and its effects on Peer Supporters' Constructs of Teaching and Learning

I have shown that there were two types of constructs that the participants used in thinking about teaching and learning. These two types were constructs that relate to expectations of the self and those constructs that relate to interaction with others. I have further shown that for the teachers and non-PSers constructs which relate to expectations of the self were considered to be most important in learning, whilst constructs relating to interaction with others were seen as more important in teaching. The PSers began with a similar division between constructs that were considered important in teaching and constructs that were important in learning. However, after their experience of acting as PSers, they began to see constructs that relate to interaction with others as important in learning. However, there was no change in the constructs they considered to be important in teaching.

This division between teaching and learning seems to be one that underlies the traditional notions of teachers and learners. Teachers are there for others whilst learners are there for themselves. If this division between what is important in teaching and learning does inform people's views of the roles of teachers and learners, then this would explain a number of issues relating to teaching and learning.

First, it would explain why it is very difficult for learners to challenge their teachers. If the teacher is operating primarily out of concern for the learners, then both teachers and learners would believe that it is unfair of learners to criticise the selfless efforts of their teachers. Equally it is unfair for teachers to undertake research on their teaching. Students may feel that teachers are not acting out of concern for the interests of their learners, if they are conducting research for themselves. Second, if learners are there for themselves then there is little reason for them to contribute to the class, that is the
teacher's job. If you are there to work alone, then what is the point of working in groups, let alone being assessed as a group?

Such divisions between teaching and learning are reinforced by the constructs of reproducing orientated, or surface, learning and meaning orientated, or deep, learning. These constructs are based on how students process their learning material and so inevitably focus on individual students. Similarly active and passive learning refer to the attitude students take to their learning material. The idea of students valuing interaction with other as a way of learning is left out of these dichotomies.

Fortunately, this is not the only view of the relationship between teaching and learning that is available. As I showed earlier teaching and learning can be viewed as parts of the same process, with teachers and learners having a shifting division of participation within a single activity. The teacher has responsibility for managing this.

This process appeared to take place with the PSers. They gained more responsibility in the learning process through running Peer Support sessions. This gave them a place to try out the knowledge they have learned and an opportunity to help others learn it. In this role, which is part teacher and part learner, the PSers took on a more active and social role in the teaching and learning process.

To conclude this section, it appears that the significance of peer learning for teaching and learning is great. It raises many issues about the definition of roles for teachers and learners. However, it is rooted in its institutional context, and can only contribute to this change. The changes in the role of teachers and learners that have been discussed in this chapter would require that there is an institutional approach to changing teaching and learning. This would involve teachers using Peer Support as a way of manipulating the division of tasks between teachers and learners, and students having an opportunity to take roles as PSers, as well as PSUs.
6.5 The Institutional Managers’ views of teaching and learning and their relationship to their views on Peer Support

6.5.1 Introduction to the Institutional Managers’ views of teaching and learning and their relationship to their views on Peer Support

The types of changes that the shift in the roles of teachers and learners would involve, are the types of institutional changes that the college is attempting to introduce (see Chapter Four). This section will consider whether their views of teaching and learning were in support of these changes and the extent to which these informed their views of the appropriate form of Peer Support.

The research questions I considered were:

3. Was there a link between institutional managers’ views of the roles of teachers and learners and their understanding of Peer Support? What are the prospects for the development of Peer Support within the institution?

In considering these questions, I examined the Institutional Managers’ (IMs’) views of teaching and learning. I found that two of the IMs had a radical view of teaching and learning. I termed these ‘the radicals’ and they outlined a new and more integrated understanding of the relationship between teaching and learning. The other two IMs I termed ‘the traditionalists’. They based their description of the changes in the college on a more traditional understanding of the division between teaching and learning. These different approaches to teaching and learning lead to different views on the appropriate approach to the implementation of Peer Support. The traditionalists saw Peer Support as an add-on, something that supplements and supports traditional teaching but does not alter it. It was seen as a support tool that remains outside of the mainstream curriculum, and this form of support is not seen as particularly different from the other forms of support existing in the college. The radicals saw Peer Support as something that can be moulded to fit the environments in which it operates. It can be integrated into the curriculum and used as, and when,
necessary. It also seen as a qualitatively different sort of interaction than students' experience elsewhere in the college.

The evidence presented here on their views of teaching and learning is taken from their responses in the interviews when I asked them to say what they saw as the difference between teaching and learning. The responses about Peer Support are based on their answers to the questions relating to their views of the future of Peer Support, the appropriate role of the PSer and the difference between the role of the teacher and the role of a PSer (see Appendix VIII for the structure of these interviews).

6.5.2 The Traditionalists

The traditionalists saw teaching and learning as separate. They based their views on the need for change in the college by emphasising the importance of learning. However, this is always separated from the activity of teaching that goes largely unchanged. For example for IM1:

"I don’t think you can really have teaching without learning so learning is what happens to the learner; the understanding of concepts, the knowledge. Teaching is the acts you do to make that happen but of course you can go into a class and teach all day and not have any learning so teaching is almost a meaningless concept. It’s learning we need to look at . . . You should be bringing it out of the learners not trying to pour it into the learner."

This manager did talk about the need to change but the role of the teacher in this change was not made clear:

"(T)he way we do it as lecturers doesn’t necessarily, isn’t perhaps the best way anyway. You know, by just talking to them, which is what we mainly do. I think the lecturer needs to change more to the facilitator of knowledge that’s getting to be the jargon. We want people to help learners to learn . . . It’s not the facts you have trouble getting hold of, it’s the concepts you have trouble with."

This manager saw Peer Support as a form of support that was separate from, and additional to, the mainstream curriculum. This manager clearly felt that they would
remain separate. The reference to timetabling refers to a separate slot for Peer Support, rather than representing its integration into the curriculum.

"Peer Support is there to aid their (students) learning and offer additionality to the learning delivered by the instructors and lecturers. Basically we need now to get in part of every full time group and many part-time groups. Get it on the timetable immediately. Give them a 2 hour lunch break on one of the days a week. One of the hours is roomed so they’re a captive audience, they’re there in the morning, and they have to be there in the afternoon for their lessons. Put it on students’ timetables as Peer Support and have the leaders trained up before the course has started. Probably from the previous year or a student worker of some kind and basically we’re saying it runs."

The other manager that shared a similar view of teaching and learning and of Peer Support was IM4. I categorised this manager as a ‘traditionalist’ because although teaching and learning were seen as similar processes they were still characterised as separate activities.

"Teaching is a process of identifying where learners are at, what the needs of the learner are to get to a certain point and work out a plan of how to get the student to that certain point and to do that I think a teacher brings a number of skills, knowledge and experience with them. And that’s a fairly complex and detailed process. Learning is probably a similar process, in that you need to identify your skills and where you are at and where you want to go and it’s a process of getting there, but the difference is that self analysis is not always easy and it relies on you knowing yourself in a great deal of detail and then having the skills and being aware of everything that’s out there. I don’t think any individual is and I think that’s where the professional expertise comes in of teachers, careers guidance etc etc. They bring a body of knowledge that they themselves have spent a long time learning. To facilitate your own analysis of yourself and analysis of your situation is a lot to take on and I think that’s the major difference. Learning is as much about planning and bringing yourself on and developing yourself as teaching is about facilitating that process, but I don’t think you can do it on your own totally without a teacher,"

There was some integration of teaching and learning in terms of teachers needing to constantly learn to be good teachers. This manager was very concerned to improve the existing system but this was predicated on the need to improve what teachers offer rather than changing the approach to, and relationships between, teaching and learning. There is very little mention of the role of learners with this process, they appear to be presented as people who things are done to rather than as active
participants in the teaching and learning process. It is the teacher who has responsibility for moving people through the learning process.

"I think to be a good teacher you actually have to be a constant learner but I’m not sure a lot of them are. That’s my own personal perception because if you not a constant learner you’re only a good teacher for a fixed period of time because everything changes . . .(I)f you look at teacher training courses I think that’s what they do. They take someone who has a subject specialism and trains them how to impart what they know to other learners and it’s that bit that’s going on in the training course and that makes them a teacher because what they go in with is subject specialism plus some of the qualities that you’d expect of a teacher anyway, the nurturing the patience, the ability to communicate and all those kind of things. I don’t think you train those into people, what you train into people is how do you take the requirement to reach here and this person is starting from here and move them along that process, that’s quite difficult because a bad teacher could teach someone for years and they could never move from their initial point. For me that’s what teaching is about and I think it’s probably we’re weak at the college. There’s a need for saying that this person is here, and this is where they want to go and we’re going to do this, this, and this because we know that will develop them and move them along that path. I don’t think we do that."

Again for this manager Peer Support was about adding additionality to the existing system:

"I would prefer it implemented in its pure form, in its original form, in its support of achievement and attainment on hard to pass courses because I think that it does have benefits, I just don’t think we’ve ever forced it as model and we moved into customisation too soon I think and think it should be obligatory on programmes with hard to pass exams. That would be my starting point to go to those really badly achieving courses with external end tests that are the problem and say OK how do we address that and make use of Peer Support . . . I would see (Peer Support) as part of the package of support. I think the discussion of where Peer Support fits in is part of a broader discussion about how we improve achievement. For me achievement is about expectation, achievement is about putting it high on the agenda, achievement is about making the end test accessible to students and developing the students towards that end test, if that’s what the accreditation is about . . . Peer Support is an element of how we address achievement in the college, it’s not just about Peer Support, not just supporting students, I think it’s about getting the teacher attitudes as well. I wouldn’t really want to push Peer Support on its own. I wouldn’t want to push student support on its own, I want to put the issue of achievement on the agenda and look at all the things that impact on achievement and address them all. You know, mentoring is as good as anything, study skills is another issue as it reflects
Peer Support is seen as similar to learning, it is about learners engaging in activity.

Teaching, however, is seen as a professional activity that learners cannot enter into.

"I think that’s where Peer Support works best, working towards a higher point. It's not necessarily about being clever it’s about knowing how to pass the test and the experience of passing the test, the experience of revising, the experience of going through pass papers and all those sorts of things . . .

The boundaries between a Peer Supporter and the role of a teacher are very different in that a teacher is bringing the professional knowledge of how to develop a learning programme that allows that teacher to impart their knowledge to a student, which then enables the student to reach and sometimes surpass the teachers knowledge, and pass exams, gain accreditation and gain achievement. I think that’s a professional activity that requires professional training. I think the skills that you use in teaching are another issue. I think that everyone has teaching skills. And again you might be able to take something, some subject matter, and using teaching skills impart that knowledge to another individual but you may not necessarily have all the underpinning, the context, and the other bits which make up teaching, which will enable you to take your student to your level and beyond and I think that’s what teaching does. Teaching teaches someone how to learn and Peer Support facilitates someone understanding something which isn’t necessarily about teaching them how to learn . . .

The Peer Supporter is being given recognition for their own success and being given the opportunity to demonstrate their own achievement and success by facilitating and encouraging other students progress but the relationship, their status is the same, they both continue to be learners. It’s quite difficult because I’m sure the Peer Supporter doesn’t see it that way, the other student probably sees the Peer Supporter having an elevated status over them, being elevated within the organisation and being similar to a tutor. I think that’s one of the dangers of Peer Support."

The traditionalists, then, see teaching and learning as very separate. In a similar way they see Peer Support as something that is very separate from the curriculum planning process. It is part of the wider support network in the college, rather than something that teachers and curriculum planners can use as one of the tools in devising a learning programme.
6.5.3 The Radicals

The two managers whose view of teaching and learning I have termed as radical had a different approach. They saw teaching and learning as an integrated process rather than as two separate activities. They also saw Peer Support as something that could be integrated into course provision rather than an adjunct; something that is always outside and merely supportive of the mainstream curriculum. However, they also stressed that it was qualitatively different from the other sorts of interactions that students experienced in the college. Interestingly both of their alternative views seemed to stem from personal experience.

IM2’s view of teaching and learning was based on a continuum from teaching as a lecture to students and teachers learning together. However, the manager made it clear that the second end of continuum was the one that was preferred.

“I’ve got a very crude image of the difference in my mind which is, you know you can see people give fantastic performances teaching a lesson, teaching a class, amazing displays of giving information and giving fantastic examples about things, a fantastic experience or even fantastic entertainment and at the end of all that you know the students haven’t learned anything. Either they’ve not learnt what they’re supposed to have learned or they’ve not learned anything, they’re just sitting there totally bemused by it. It’s an extreme example but it is that; it’s to do with a kind of consciousness. If as a teacher your consciousness is about delivering some subject matter or getting through a certain amount of curriculum, you might feel you’ve done that effectively but the danger is feeling you’ve done that effectively without actually finding out whether the students are with you, whether they’ve made the same journey that you’ve made. That’s essentially the difference . . . . I had a terribly embarrassing interview with somebody once. Not like this but it was an educational theorist who came here for something and I remember sitting down having a cup of coffee and we were in a workshop and people were working on computers and things, ages ago, and he said ‘Which of these people are students and which are staff?’ and I said ‘Well, it doesn’t really matter does it because they’re all learning’ and he looked as if I was completely mad and I felt embarrassed about it. But at one level I think there should be that, teachers and learners learning at the same time and engaged in a developmental process . . . . When you’re into the more formal delivery of a formal set of texts, I think it’s harder to look at like that and I think you need to separate out the role of the teacher and learner but I think there’s a bit of continuum from the teacher who didn’t take any notice of as to whether people are learning through to the teacher who actually learns with
the students because they’re going through a joint process. That whole spectrum can be teaching for me.”

Interestingly, IM2 had a similar notion of teaching as a design process as IM4. However, unlike IM4, IM2 emphasised this as a joint activity between teachers and learners.

“The important thing in terms of Peer Support and being a student and a learner is having the confidence that you know where you’re going, you know what you’re trying to achieve, you know what’s required of you but you’ve got a kind of motivational thing whether from yourself or from other factors coming in because you can see the value of doing that programme that you’re doing. You’ve also got the ‘learner as customer’ notion, where the learner has got a choice. Then I think learning is a difficult process, it can be very hard work, and I think there’s something I had was interactions between the teacher and the learner which are needed to help keep people on track and to help people to keep going when it’s hard but I was also thinking as a learner there’s a different kind of set of things that come into play when you’re deciding whether to carry on or drop out or so on and so forth. So it’s quite complicated . . . In fairly simple terms, I do see (teaching) as a design process. It will vary according to the nature of the course and the programme. In terms of a systems diagram you’ve got students going on to a programme, they’ve got to get from that point to that point and they have to learn X, Y, and Z, and they may have to experience things and do various things and the teaching role is designing the best, I hate these words, the best journey through that, the best package of things that are appropriate to that individual student.”

IM2 saw Peer Support as something that was there to be integrated into students’ programmes and to offer them support. IM2 also saw it as a qualitatively different sort of interaction than teacher to student or student to student. This is demonstrated in IM2’s response to the question about the PSer’s role and its boundaries.

“Well, I think, my off the cuff reaction anyway, is I don’t think they’re putting together learning programmes, I don’t think they’re developing teaching materials, I don’t think they have the breadth of expertise or knowledge that you would expect from a teacher in terms of knowing what would be available and pulling in appropriate things for the programme of study. I would see them as operating within a framework that has been put there by somebody else, by a teacher and by examining boards in the sense of by course specifications. An approach the teacher has established, materials and assignments the teacher has established, but I would see them operating firmly on the student side of the learning process, in terms of helping students work out how to operate best amongst all these. They might
have direct teaching, they might have assignments, they might be sent off to do research, they might be doing work-based learning and I think there is a role for Peer Supporters to help people make sense of what's going on with all these different approaches and how they need to use them, how they need to respond, to some extent, if people feel they have not got enough information to help them find out how to get more information and on the other side if they feel they’ve got too much overload of stuff they need advice on how to cut through that and pick up on what are the important bits. It’s helping people to operate as learners. It’s bad to personalise it in some ways but I’m thinking about when I was an Open University student. You operate in a very remote way from the teaching methods and the teachers, who may be on TV or assignments in books and so on, and we used an informal kind of Peer Support then really to help to learn how to manage the system and to help you to focus on what the most important things to do to get through and to know how to deal with problems as they arose. I think that sort of support comes well from another student.”

IM3 had a similar view of teaching and learning. It may be remembered from Chapter Three that IM3 felt that there was too much emphasis on teaching and not enough on learning in the college

“I think one of the major difficulties facing this college and other colleges and any other learning institution is the over emphasis on teaching and all that stuff that surrounds that and a lack of attention to what learning is all about and how learning takes place.”

IM3, however, did see teaching as important; it was the traditional view of teaching that was rejected. This was shown when IM3 was asked to define the difference between teaching and learning.

“Teaching is about engaging with learner in the learning process . . . They’re presented as different and they’re not. Let me give you an example to explain this. When I first came into teaching and was an academic, it was through the traditional route. I came into the college as a sociologist, psychologist, economist, and I found that very dissatisfying and I kept more and more talking about things that weren’t on the syllabus and doing things that weren’t on the syllabus but discovering that I didn’t have to because students would go and do that anyway, because they had textbooks and stuff like that. So I shifted out of that into things like pre-vocational education and access to higher education by independent learning. In terms of what we were doing on that programme I was not much different, institutionally different yeah, but I was an expert learner in another group of adults and there we used the group as a resource, other members of the group slipped into a teaching role in a complementary but different way of
doing things. I really enjoyed it and thought that was what learning was about. I think that if we could remove the conception of them being distinct and see them as aspects of the same activity, students have got an awful lot of things of benefit for teachers to learn but the teachers aren't listening. All the institutional noise of their own institutional position.”

IM3 saw Peer Support as something that could be adapted to the needs of learners and that could be used in a variety of situations.

“I think it’s got a very bright future in the college. When we talk of modularisation of the curriculum, unitisation of the curriculum. That flexible curriculum offer is going to require a very strong tutorial programme. It’s the cement between the bricks of the modules. It’s going to require an emphasis upon developing the learner in terms of autonomy. A lot less will be taught by teachers within the classroom, within workshops. A lot more will be done flexibly through open study centres through a variety of contexts. Now you’re got to give them a different form of learning support to the learner. That’s where Peer Support will come into it. So there’s an expanding stage for Peer Support. Whereas Peer Support has been carving out its niche, it’s actually now the whole curriculum’s unfolding to take in techniques like Peer Support. Which is rediscovering learning, putting the emphasis back on the learner . . . What we’ve seen in its development from SI into the programme of Peer Support, it will go on growing. It’s about where learners will take it. There isn’t a set model, a set recipe. There are ingredients which can be mixed together in different ways by different learners and that’s the thing to keep hold of.”

Peer Support was seen as a very different kind of interaction from that which is normally experienced in teaching or support situations:

“Peers can offer the experience of having gone through the process, having made mistakes in the process and found ways of doing things in the process. They have a degree of credibility there. They can very often speak in a recognisable language, they can recognise what actually the learner is trying to convey in terms of “This is my difficulty”, which a professional teacher may not always be able to recognise. So I don’t think we should underestimate the complexity or the fruitfulness of that sort relationship. I think that Peer Supporters also have a very beneficial, if we were to recognise them, if we were to push them, push the recognition of PSers as being expert learners and therefore deserving of a status.”

The radicals see teaching and learning in an integrated way, as different sides to a single task. Following from this they see Peer Support as something that can be
shaped to fit with the context in which it is to operate. Peer Support is also seen as a qualitatively different sort of educational interaction.

6.5.4 Conclusion to Institutional Managers’ views of teaching and learning and their relationship to their views on Peer Support

There was a clear link between the IMs views of teaching and learning and their views of peer learning. There were two views of teaching and learning amongst the college’s senior managers. All four saw the need to re-emphasise learning, but this was done in different ways. The traditionalists whilst emphasising the need to focus on learning maintained the division between the roles of teachers and learners, there were still separate tasks that the teacher had that learners would not enter into. The radicals had an alternative view of the relationship between teaching and learning. It was seen as more fluid, teachers and learners could at different times take on different roles in that process. Sometimes the teachers would learn, whilst the learners taught. These views resulted in contrasting views about the role of peer learning. Which of these views of teaching and learning prevail in the college will have a profound effect on the way in which learning situations are managed. If the more traditional view is taken, as teaching is reduced in the college, then this will be replaced by support services, like Peer Support, that are designed in an attempt to mirror that teaching. If the more radical view prevails then traditional teaching will be used in conjunction with a variety of curriculum development tools, including Peer Support, which will be used to give students a greater choice in their learning, whilst the roles between teachers and learners will become more flexible. This will give teachers support from their students, whilst more actively involving the students within their learning.

6.6 Conclusions

I have shown that peer learning has a wider significance for teaching and learning. The significance of peer learning is based on the role of the peer facilitator who by learning through teaching questions the traditional divisions between the roles of teachers and learners.
In the conclusions to this chapter, I review my research approach and my findings in this chapter. I make recommendations based on these. First, I examine my analysis and interpretation of the research data and examine a number of shortcomings in these areas. I conclude that this chapter has demonstrated the wider significance for teaching and learning of peer learning in an innovative way. I have shown how peer learning can have different outcomes for peer facilitators and the students facilitated. The peer facilitators changed their views on what is important in learning, whilst the students facilitated learnt how to achieve on the course. Using the interviews with the institutional managers, I have also shown that people's views on teaching and learning inform their views of peer learning. I have shown how peer learning is rooted to the context in which it operates in a way that is consistent with the evidence in Chapters Four and Five.

6.6.1 Analysis of data

In analysing the data there were a number of issues. First, the ASQ gave a very simple measurement of the Y1s and PSers approaches to studying. Second, I examine issues of validity and reliability in analysing the repertory grids. Finally, I outline how I analysed the interview data from the interviews with PSers and IMs.

The ASQ gives simple measures of the participants' meaning and reproducing orientations to studying. I have suggested that the PSUs developed more strategic approaches to learning. A more detailed questionnaire would have enabled an examination of the extent to which this was the case, as would an interview with the PSUs. The reason a longer questionnaire was not used was because the students offered PS completed the ASQ in their lessons, and so a short questionnaire was needed so as not to disrupt these lessons too greatly. Interviews were not conducted with students offered PS because the students were not interested in participating in interviews.

The repertory grids were analysed in an original way by examining participants' rating of the importance of their constructs for teaching and for learning. Through this
I categorised constructs as those which related to expectations of the self and those which related to interaction with others. The issue of the reliability of my categorisations was addressed by giving clear examples of the ways in which I had categorised participants’ constructs and views. However, it is not clear how valid these categorisations were. This categorisation could have been validated had I taken my categorisations back to the participants in the repertory grids. However, this would have involved asking the participants to spend more time involved in the research process. Instead, I have attempted to validate the results from the repertory grids through triangulating them with the focus group interview with the PSers.

The interview with the PSers gave useful supporting evidence for both the Y1s’ and PSers’ ASQs and the changes in the PSers’ repertory grids. The interviews with the IMs examined their views of teaching and learning and the relationship of these to their views on PS. I showed in my research design (Section 3.7.2) how themes were identified from these sources of evidence.

6.6.2 Interpretation of data

A variety of data was used to support the argument presented in this chapter. I have used the ASQ with the PSers and the Y1s, repertory grids with teachers, PSers and non-PSers, as well as evidence from the group interview with the PSers and the individual interviews with the IMs. There were a number of issues relating to the interpretation of this data.

The ASQ was used with the Y1s and the PSers. The use of the ASQ raised different issues with each of these groups. First, in examining the ASQs of the Y1s, there was no qualitative evidence from the Y1s to support this. This meant that there was no evidence to suggest that they had experienced the changes that were recorded on the ASQ. Qualitative evidence from the PSers did suggest changes in the PSUs' approaches to studying but this was likely to emphasise the more positive experiences of peer learning on the Y1s approaches to studying. Second, whilst there was qualitative evidence from the group interview with the PSers to support the evidence
from the PSers’ ASQs, there was no comparison group to put these results into context. This meant that it was not clear to what extent the changes in the ASQ were due to the experience of acting as a PSer.

The repertory grids were conducted with teachers, PSers and a non-PSer comparison group. These were analysed in a new way that sought to analyse the structure of participants’ constructs. However, it is not clear to the extent to which the participants’ ranking of the importance of each of their constructs in teaching and in learning gives an indication of the structure of their construct systems. A discussion with the participants about the change in their repertory grids may have given an indication of the relationship between a participant’s ranking of a construct and its place in their construct system.

The interpretation of the evidence from the IMs was problematic. The reason for this was that I took the IMs’ views to be representative of the institution’s views. This is over simplistic for two reasons. First, two major factors in shaping the institutional direction are external in terms of funding mechanisms and government policies. Second, I treated the views of the IMs as if they had equal weight. This is unlikely to be the case, as IMs have different interests and areas of responsibility within the college. However, as imperfect as this measure of the attitude of the institution to peer learning and teaching and learning was, it was best method available to examine the views of the institution.

6.6.3 Conclusions and recommendations

Despite issues in the analysis and interpretation of data, I have demonstrated the wider significance of peer learning for teaching and learning. Through the use of PSers who learnt as they taught, the traditional distinctions between teachers and learners were challenged. However peer learning still reflected the traditional distinctions between teachers and learners.
I have shown that peer learning reflects the traditional distinctions between teaching and learning in two ways. First, there are different outcomes for PSers and PSUs from their involvement in peer learning. The PSUs taking on a traditional learners role learn how to approach and achieve on the course. This leads to them adopting significantly less meaning orientated approaches to learning. The PSers on the other hand, take on elements of a teachers role. This leads to them becoming more confident learners and taking a broader view of the subject they are studying. This suggests that students should have the opportunity to act as both PSers and PSUs so that they can gain in these different ways.

Second, the interviews with the IMs showed that there views on peer learning reflected their views on teaching and learning more generally. By extension, this suggests the people’s approaches to peer learning will be informed by their approaches to teaching and learning more generally. This re-emphasises the importance of involving people in the implementation of peer learning. This is because it suggests that people use their understandings of teaching and learning to approach peer learning. If the model of peer learning contradicts the person’s model of teaching and learning it may rejected. However, if people build their own models of peer learning they will use their understanding of teaching and learning to produce a model they are happy with. This model can be developed based on experience over time.

I found that the PSers’ views of the role of learners were challenged by their involvement in PS. After their involvement in PS, they saw the role of learners as more focused on interacting with others than they had before they were PSers. Their teachers and fellow students both saw learning as a solitary and individual process. Even this change in the views of the PSers was rooted to its context. Whilst PSers changed their views of the role of learners their views on the roles of the teachers remained the same as their teachers and fellow students. However, these results still suggest that there is a great deal of potential in allowing students to learn by teaching. This appears not only to improve their learning but to develop their understanding of
the role of learners. This questions the traditional role of teachers and suggests that they should be more focused on allowing students to teach and learn from each other rather than simply focusing on the delivery of course content.

There should be further research into peer learning’s effectiveness in challenging constructs of teaching and learning. In particular research is needed into whether involvement in peer learning affects teachers’ and the students’ facilitated constructs of teaching and learning. Second, the approach to researching the significance of peer learning for constructs of teaching and learning could be used to examine the relationship between teachers’ and learners’ constructs within more traditional teaching and learning environments. This research could offer ways to shift the relationship within these environments and help to promote changes in the roles of teachers and learners.

Changes in the roles of teachers and learners are required so that learners become more responsible for the learning process. In this changed process, teachers will manage the division of participation in teaching and learning activity, sometimes teachers will learn whilst learners will teach. If this were the case peer learning would become an integral, and invisible, part of the mainstream curriculum. It would no longer be visible because the everyday experience of teaching and learning would involve students and teachers learning from each other.
CHAPTER SEVEN: CONCLUSIONS

7.1 Introduction

7.1.1 Summary of the chapter's argument

In this PhD I have argued that peer learning is rooted to the context in which it operates. I have shown that this means that the implementation of peer learning needs to be considered so that it fits with this context. I have also shown that the outcomes of peer learning schemes are a result of the interaction between the schemes and the contexts in which they operate. Whilst peer learning schemes can affect the context in which they operate by challenging peer facilitators’ constructs of teaching and learning, the scope of this effect is defined by what is possible within that context.

In my conclusions, I present a similar argument for the relation between my research into peer learning and previous studies into peer learning, and teaching and learning more generally. My research is rooted to this previous work but also offers ways in which to develop these approaches. However, the scope of these developments is defined by the existing research into peer learning and teaching and learning more generally.

7.1.2 Structure of this chapter

In my conclusions I consider four aspects of the research contained within my PhD. I first consider the elements of originality contained within my PhD. I focus on five aspects of my work that have been original. These are my definition of peer learning, my approach to implementing peer learning, my innovative use of a research method, my approach to researching peer learning and my findings about peer learning. In each case I show how my originality is based within the literature on education. I focus on my approach to research peer learning in more detail in the third section of this chapter. I show how I met the criterion for researching peer learning that I developed in my literature review. I show that each element of this criterion has been
useful standard to measure research into peer learning against. In the fourth section of this chapter, I focus on my research findings. I examine the three areas of this research: the implementation, operation and significance of peer learning, but also show how the findings in each of these areas relate to findings from the other areas. Finally, I show that my work has implications for the future implementation of, and research into, peer learning and for approaching, and researching, teaching and learning more generally. I make recommendations on each of these four issues.

7.2 Originality in this PhD

In this section I focus on five elements of originality that are contained within this PhD. I deal with my new definition of peer learning, my new approach to the implementation of peer learning, and my innovative use of a research method. I only outline my innovative research approach and my new findings about peer learning in this section, because in Sections 7.3 and 7.4 I focus on these issues in greater detail. For each of these elements of originality I show how they were related to previous work in educational research.

7.2.1 A new definition of peer learning

I have developed a new definition of peer learning (see Section 2.2.2). This definition was based on previous definitions of peer learning (for example Goodlad 1995, Topping 1996). However, my definition has a more rigorous definition of the term 'peer' within peer learning. Previous definitions were teacher centred in the sense that they defined all students as peers. My definition is based on the notion that students should have some element of common experience beyond their status as students if they are to be defined as peers.

7.2.2 A new approach to implementing peer learning

Based on the literature on the management of change (see Section 2.4.3), I developed a new approach for implementing peer learning. This is expressed in my criterion for researching peer learning (see Section 2.4.4), which seeks to overcome the instability of peer learning schemes. I have used this criterion to compare the two implementation strategies used to promote peer learning in the college and I have
shown that the Peer Support implementation strategy was more effective than the previous SI implementation strategy (see Section 4.6.4). I have also identified ways in which the Peer Support implementation strategy could be improved and identified the factors that are important in the successful implementation of peer learning (see Section 4.6.4). I have considered the views of all those involved in the implementation of Peer Support in the college, and incorporated these into an action research approach to implementing peer learning (See Section 4.3).

### 7.2.3 A new component in the use of a research method

As I showed in my Research Design (see Section 3.4.4), repertory grids have been used many times in researching education. However, this was the first time they have been used to investigate peer learning. I also added a new component to the eliciting of repertory grids. My innovation was to ask the participants, at the end of the elicitation process, to rank each of their constructs in terms of their importance of teaching and learning. This innovation, which was a development from the work of Pope and Denicolo (1993), allowed me to consider the structure of participants' constructs of teaching and learning. For example, there were constructs that the participants could apply to people who were learners but that they did not consider as important in learning. It was this innovation which allowed me to track the PSers' changing understanding of the roles of teachers and learners (See Section 6.4.2).

### 7.2.4 A new approach to researching peer learning

I have developed a new approach to researching peer learning based on three shortcomings of the previous research into peer learning. This approach is expressed in my criterion for researching peer learning (see Section 2.7). This approach considered three aspects of peer learning: the implementation of peer learning, the operation of peer learning and its wider significance for approaches to teaching and learning. I consider the effectiveness of this approach in the next section.

### 7.2.5 New findings about peer learning

In examining peer learning I have produced new findings about peer learning. I have produced the first study to examine the implementation, operation and significance of
peer learning within a Further Education setting. However, this study was based on criticisms of approaches to evaluating educational innovations using controlled experiments (see Section 2.5.2).

I have considered the effects of the implementation of peer learning. I have shown that an implementation strategy that allowed teachers and students to design their own peer learning schemes, the Peer Support strategy, was more effective than a strategy based on a single model of peer learning, the SI implementation strategy (see Section 4.6.4). It was more successful from the perspective of managers, teachers, peer facilitators, the students offered peer learning and my perspective as the co-ordinator of peer learning.

In considering the operation of peer learning schemes, I evaluated two Peer Support (PS) schemes within the context in which they operated. I found that students with a variety of previous academic achievement (Section 5.4) and approaches to studying (Section 5.5) used PS. I also showed that PS was effective in improving students’ academic performance across the range of previous academic performance and with a variety of approaches to learning (Section 5.6). I demonstrated that the relationship between the Peer Supporters (PSers) and the Peer Support Users (PSU) (Section 5.4.3), the academic discipline and the way these were assessed (Section 5.5.4) all affected the operation and outcomes of the PS schemes.

I have shown that PS schemes had a significant effect on PSUs’ and PSers’ approaches to studying. However, these two groups were affected in different ways, which reflected their qualitatively different roles within PS (Section 6.3.4). The PSUs came to understand how to approach their studies in a way that would help them to succeed on the course. However, the assessment demands of the course meant that this involved them becoming more focused on the final exam and thus becoming less meaning orientated in their learning (Section 6.3.2). The PSers became less reproducing orientated as they became more confident as learners, and gained an overview of the course content they were studying (Section 6.3.3). I investigated the
effect that peer learning has on peer facilitators’ understanding of the roles of teachers and learners (Section 6.4). I showed that through their involvement in PS, the PSers developed their understanding of their roles as learners. Before their involvement in PS, in line with their teachers and fellow students, the PSers saw learning as an individual and solitary process. After their involvement in PS, the PSers’ views of learning became more like their views of teaching in that they began to see that the social elements of teaching and learning situations were important in good learning. However, the PSers’ views of teaching did not change and these seemed to be defined by what their teachers did (Section 6.4.3). Finally, I showed that the institutional managers’ views of the appropriate form of peer learning were based on their understanding of the teaching and learning process (Section 6.5). Based on their views of teaching and learning, I showed that there were two possible future for peer learning, and learning support more generally, within the college (Section 6.5.4).

In Section 7.5, I examine the research findings more generally and relate the findings of each of the areas to the findings from the other areas.

7.2.6 Conclusion of originality in this PhD

I have shown five elements of originality in my Ph.D. These relate to defining peer learning, implementing peer learning, my use of research methods, and my general research approach and research results on peer learning. However, all of this originality is based on previous research into peer learning or into education more generally. The definition of peer learning is a refinement of earlier definitions, the approach to implementing peer learning is drawn from the literature on managing change, the innovation in research methods is a simple addition to previous approaches to the eliciting of repertory grids, the research criterion was developed through my own criticisms, and those of others, of peer learning research, as well as criticisms of approaches using controlled experiments more generally, and the new findings about peer learning in Further Education are based on research approaches that have been used in other contexts.
7.3 Review of the effectiveness of the research approach

The research approach I used gave an overview of the working of peer learning in the college. This approach was based on the criterion for researching peer learning that I developed in my literature review (see Section 2.7). I used this to overcome three shortcomings of the existing research into peer learning. First, the lack of consideration of the implementation of peer learning schemes. Second, the criticism that results of peer learning schemes have not been placed in the context in which they operate. Third, the lack of consideration of the significance of peer learning for approaches to teaching and learning.

In this section I set out each element of the research criterion and show that my research approach fulfilled each of these. I show that each element of the criterion has been a useful standard to aim towards when researching peer learning.

7.3.1 The research approach to the implementation of peer learning

The first condition of the research criterion dealt with the implementation of peer learning. It stated:

The implementation of peer learning needs to be researched considering the context in which it has been implemented. This involves research to examine the place of peer learning within the institution. The implementation of peer learning needs to be an object of research itself, rather than it being assumed to be a uniformly smooth process.

1. To what extent did I meet this element of the criterion?

I examined the place of peer learning in the institution using an action research approach (Section 4.3). This included the consideration of the views of students, peer facilitators, teachers and managers of the implementation of peer learning. The research was based mainly on questionnaires and the interview with the institutional managers. This approach was appropriate as the implementation of peer learning was considered to give an overview to complement the more detailed examination of the case study of peer learning schemes.

There were two issues with this action research approach. First the examination of the development of the implementation of peer learning after the fact can seem as if it is a
rationalisation of the process. However, all research involves the identification of themes that develop over the time that the research is taking place. In using an action research approach I sought to make this process explicit. Also, I guarded against the over rationalisation of the process after the event by using extracts of progress reports that were written to my PhD supervisor at the time that the changes were taking place. Second, as a result of the action research, my research approach evolved over the time data was collected. This made comparisons between the two implementation strategies difficult. However, the changes in the research approach were based on my changing understanding of peer learning and reflected changes in the operation of SI and then Peer Support. For example, initially there was little data collected from the teachers involved in peer learning schemes. This was a significant gap as they have a major role in presenting peer learning schemes to students. It was not until the Peer Support implementation strategy that I recognised the importance of their role, and so it was not until this stage that I began to examine their experience of peer learning schemes.

2. How useful was this element of the criterion?

The examination of the place of peer learning within the institution proved to be important. It showed the effect of different approaches to implementing peer learning, and showed how these can make schemes more or less relevant to students. Equally, the action research approach I adopted proved very useful in developing the Peer Support approach to implementing peer learning. The approach, which considered the expectations that managers, teachers and students had of Peer Support, is not fully developed; it is constantly developing to take account of the changing situation and the new challenges and opportunities that this presents. This focus on the implementation of peer learning remains important even if peer learning is fully embedded in the institution.

7.3.2 The research approach to case studies of peer learning schemes

The element of the research criterion that dealt with case studies of peer learning stated:

Results from individual schemes need to be treated with care. The research needs to be based on the scheme that is implemented. It cannot be assumed
that this is very similar to the model that was produced before the scheme was implemented. The interaction between peer facilitators and the students facilitated needs to be considered, as does the effect of the training and support that the peer facilitators receive. The types of students that use the scheme needs to be considered, and any examination of students results be placed in the context of how they develop over the course of the year. Results from the individual schemes need to be placed within the wider context of the structure of the course and the institution in which the scheme is set.

1. To what extent did I meet this element of the criterion?

The approach I used in the case study was to triangulate the data from different research methods to examine whether peer learning was effective in the college (Section 5.2.2). This approach showed how peer learning needs to be evaluated with the reference to the context in which they operate. I examined how the structure of the PS schemes, the relationship between the PSers and PSUs, and the academic disciplines and their methods of assessment affect the operation and outcomes of peer learning.

The problem with the research approach was the lack of qualitative data collected from the students who were offered PS. This meant that the majority of the qualitative data was based on the PSers’ experience of PS, which may have been more positive than those of the students who were offered PS. The evidence from the PSers did seem to fit with that given by the students offered PS, so it is not clear the extent to which this was a problem. Further evidence from the students offered PS would have cleared up this issue but these students were not interested in participating in this research.

2. How useful was this element of the criterion?

This element of the research criterion proved to be important. The examination of the different approaches of running sessions in the two schemes showed how these could affect the students who used PS. The examination of the structure of the course, especially its assessment methods, helped to explain the types of students who used PS. Finally, this element of the criterion helped to re-emphasise the importance of the approach to implementing peer learning. The process and outcomes of schemes are shaped by the context in which they operate. This makes the involvement of those
who are part of this context essential to make the schemes fit with their situation. It is the students and teachers who have the knowledge about the way the course works and it is they how are best placed to know which approach to peer learning will work best within their context.

7.3.3 Research approach to investigating the significance of peer learning

This was expressed in the third element of the research criterion:

The effects of peer learning on peer facilitators’ and the facilitated students’ conceptions of teaching and learning need to be considered. This needs to be placed in the context of the views of their teachers on the roles of teaching and learning. Finally, this must be placed within the institutional context, as only conceptions of teaching and learning that fit within the prevailing climate are likely to be sustained.

1. To what extent did I meet this element of the criterion?

I examined the effect of peer learning on the approaches to studying of the PSUs and the PSers (Sections 6.3). I also examined the PSers’ conceptions of teaching and of learning and placed this in the context of their teachers’ and some of their fellow students’ conceptions of teaching and learning (Section 6.4). The institutional context was examined through an investigation of the institutional managers’ conceptions of teaching and learning and their views of Peer Support (Section 6.5). However, there was a lack of supporting qualitative data from the teachers and the PSUs. This again may have led to more positive experiences of PS being emphasised within the research.

2. How useful was this element of the criterion?

This element of the criterion proved to be very important. First, the focus on the PSUs’ and PSers’ approaches to studying showed the different ways in which they benefited from their PS interaction. Second, the examination of the PSers’ constructs of teaching and learning uncovered some very interesting evidence about their understanding of what is important in teaching and learning. This re-emphasised the importance of the context in which peer learning operates because there was a clear relationship between PSers’ constructs and those of their teachers. The examination of the institutional managers’ views of peer learning, and the relationship between
these and their views of teaching and learning, highlighted the importance of the on­
going focus on the implementation of peer learning. The approach to implementing
peer learning needs to change over time to fit with the institutions changing view of
good practice in teaching and learning. This allows peer learning to capitalise on any
opportunities for supporting students in their learning that this change in focus
presents.

7.3.4 Conclusion of review of research approach

The research approach fulfilled the criterion for researching peer learning schemes.
There were a number of shortcomings. In particular, there was a lack of supporting
qualitative evidence from the students who were offered support and the teachers of
courses that used Peer Support. This meant that majority of the qualitative evidence
came from the PSers and the institutional managers, which may have led to more
negative experiences of Peer Support being underplayed. However, the qualitative
and the quantitative evidence did fit together in a way that suggested clear findings
from this research.

The criterion for researching peer learning proved to be a very useful tool. It led to the
uncovering of some important elements of peer learning and this suggests that the
shortcomings identified in the previous research into peer learning were important. It
emphasised the importance of the three parts of peer learning that were investigated;
that is the implementation, operation and significance of peer learning schemes.
Finally, it held these three elements together in a way that the results from the
research based on one element of the criterion had implications for the other two
elements.

7.4 Review of Research Findings

In Section 7.2.3, I outlined my research findings. In this section I take a more general
look at the findings in this PhD. I again look at the implementation, operation and
wider significance of peer learning separately. However, I bring in evidence from
each of the chapters to examine these issues.
7.4.1 Findings about the implementation of peer learning

I found that, in implementing peer learning across an organisation, the approach to peer learning needs to fit with the context in which it is implemented. The best way to achieve this is to involve the students to be offered peer learning, the peer facilitators, teachers, and managers in shaping peer learning to fit with its context. However, these participants will not be involved at the same levels and in the same way. The students who are offered peer learning are interested in developing something that will support them in their learning. The peer facilitators want a scheme that will help others whilst developing them in terms of their knowledge and skills. Teachers are interested in a system that will support their students whilst giving them a minimum of extra work. Managers are interested in the development of a cost-effective approach to peer learning that will increase student retention and achievement (see Section 4.4.6).

The implementer of cross-college peer learning needs to adopt different ways of working with each of these groups. They need to act as a translator between these different groups to help to put the aims of one into the language of the other. However, there will be conflicts between the aims of these groups and the implementer of peer learning needs to make decisions about how to resolve these conflicts. An example of such a conflict is the issue of to what extent peer learning is integrated into the courses it supports. For students and teachers the more integrated peer learning is in their course the more it becomes part of their everyday practice. However, managers, having made a decision to invest in peer learning, will want the results of this initiative to be clearly identified and separated from the other parts of the course (Section 4.4.6).

The implementer’s role thus becomes one of a facilitator who helps these groups to build their own models of peer learning, a translator who helps to put the ideas of one group of participants into the language of the other groups, and a negotiator who attempts to resolve conflicts between the aims of each of the groups (Section 4.4.6).
In Chapter Five there was evidence that supported these findings on the implementation of peer learning. The finding that changing the elements that make up peer learning will lead to a change in the process and outcomes of the schemes re-emphasised the importance of involving students and teachers in designing schemes of peer learning. They have knowledge of the context in which they are operating and therefore are best placed to decide which elements are needed to make up their schemes of peer learning (Section 5.4.4).

In Chapter Six, I found that the opportunity peer facilitators have of learning by teaching helped them to develop a more social view of the role of learners. I argued that this implied that if students had a greater responsibility for the activity on their courses, then their views of the role of learners would become more dynamic (Section 6.4.5). If my approach to peer learning is to be internally consistent then this suggests that peer facilitators should have a role in shaping any schemes of peer learning in which they are involved. This is because, by the extension of this argument, the greater peer facilitators’ role in shaping peer learning, the more dynamic their understanding of this role will be.

Also in Chapter Six, I found that people’s views of teaching and learning inform their ideas about peer learning (6.5.4). This suggests that people come to peer learning with views on how it should operate based on their views of teaching and learning. If people are involved in shaping peer learning this gives them the opportunity to use their views of teaching and learning to build a scheme that they support. If a scheme is imposed on them which is in conflict, or does not fit, with their views of teaching and learning, then they are unlikely to become involved with it. For example, the approach taken to training and supporting the peer facilitators can affect their understanding of peer learning and the understanding of students who use the scheme. Under SI, the two day training involved trying to teach the peer facilitators how to support students without teaching. The peer facilitators did not understand this model, as their only previous experience of how to support students in their learning was traditional teaching. This led to low attendance at the sessions, as
the students who were offered peer learning and the peer facilitators did not understand their roles. Under Peer Support, I worked with the PSers’ understanding of how to support other students. This led to sessions in which the PSers’ and PSUs’ understanding of ways of supporting students evolved together. The students offered PS found these sessions more relevant to their needs and attended in greater numbers. In the end these sessions were very close to SI model of sessions, but the process taken to reach these was very different (see Section 5.3.4).

7.4.2 Findings about individual peer learning schemes

I found that peer learning schemes can be effective in supporting students across all levels of previous academic achievement and with a variety of approaches to learning in Further Education (Section 5.6). This suggests that the use of peer learning should be extended with education. However, in using peer learning I found that there were many factors that affect its operation and outcomes.

The relationship between students who take on the role of peer facilitators and the students who are facilitated can affect the operation of peer learning. If the peer facilitator is much further on in their educational careers, this can lead the students who use peer learning to perceive their peer facilitator as more of a teacher. This can influence which students use peer learning (Section 5.3.6). This finding re-emphasises my more rigorous definition of peer learning. Peer learning needs to be based on students’ shared experience if it is going to offer a different type of interaction from that between teacher and learner (Section 2.2.2).

Equally the structure of the peer learning sessions can affect which students use peer learning. The more formal sessions of PS on Y2 appeared to appeal to the more able students, as measured by previous academic achievement. Whereas the less formal sessions of PS on Y1 appealed to a broader range of students (Section 5.4.4).

The structure of the course that is supported, particularly the methods by which students are assessed will affect the way in which peer learning operates. I found that
the students who use peer learning seem to gain an understanding of how to achieve on their courses. This makes elements of the course that are usually implicit explicit. For example, the PSers on ‘A’ level Science focused on preparation for the final examination as the most important element of the course. This led the PSUs on Y1 to becoming less meaning orientated in their approaches to studying (Section 6.3.3). Such outcomes might be unpalatable for teachers who see their courses as being about more than preparation for the final examination.

These findings echo those in Chapter Four of the importance of involving students and teachers in designing their own schemes of peer learning. It is they who have the closest knowledge of the effect of the relationship between the peer facilitators and the students offered peer learning and the structure of the course. It also emphasises the importance of the continual monitoring and development of peer learning because if one of the factors in peer learning changes then the most appropriate form of peer learning may change.

These findings all emphasise the importance of peer learning fitting with the course it supports. This means that peer learning will reflect the course and the students that it supports. Whilst peer learning can make the implicit elements of the course explicit to students it is not a panacea to poor results on a course. Rather it needs to be part of wider changes in the approach to teaching and learning on courses.

7.4.3 Findings about the wider significance of peer learning for teaching and learning

I found that there were different outcomes for the peer facilitators and students offered peer learning in terms of their approaches to studying. This appeared to be based on their different roles within the peer learning process. The students offered peer learning learned how to survive and achieve on their course, whilst the peer facilitators improved their understanding of their subject and became more confident peer learners (Section 6.3.4). This suggests that students should have the opportunity to act as both peer facilitators and to be facilitated.
Peer facilitators changed their views of the role of learners through their involvement in peer learning. They began to see interaction with others as more important in learning, rather than seeing learning as a solitary process (Section 6.4.5). Thus they gain more than just academic knowledge through the involvement in peer learning. This has implications for the way in which students are enabled to become more autonomous learners. If students are to increase their understanding of their role as learners, students should be given more opportunities to learn by teaching. These results suggest that the greater the responsibility students have on their courses for the teaching and learning of their fellow students, the more dynamic they see their role as learners. If this is the case, then it would appear that the best way to promote autonomous learners is to shape students' role so they are actively responsible for the learning of their fellow students.

I have shown that the Institutional Managers (IMs) views of peer learning were related to their views of teaching and learning (Section 6.5). This shows the importance of involving people in shaping peer learning so that they can build schemes that reflect their views of teaching and learning.

Finally, the findings on the wider significance of peer learning for teaching and learning come back to the central idea in this thesis. Peer learning is rooted to the context in which it operates. It can offer some opportunities for change but it is not the answer to poor retention and achievement. Rather it reflects the current situation in relation to teaching and learning within an organisation. Peer learning is a curriculum development tool that can be used by managers, teachers and students to enhance students learning opportunities. Perhaps the greatest opportunity it offers for change is that if these groups discuss the appropriate form of peer learning within their organisation and courses, then this may lead to a wider debate on approaches taken to teaching and learning more generally.
7.5 Possibilities for peer learning

I have shown in this research how peer learning can be implemented across an institution. I have shown that such schemes can be effective in supporting students in their learning and can develop the PSers understanding of teaching and learning. These results have implications for the implementation and research of not only peer learning schemes but also approaches to, and the research of, teaching and learning situations. I present the implications for these four areas and make recommendations based on these implications.

7.5.1 Implications for implementing peer learning

Peer learning should not be viewed as a panacea to poor educational performance. It is better viewed as a curriculum development tool that can be shaped by managers, teachers and students to fit with the context in which they are working.

In implementing peer learning across an institution the evidence suggests that those effected by and those who can affect peer learning need to be involved. This is so that the peer learning implementation strategy can fit with the context in which it operates. It is also because people’s views of peer learning are informed by their views of teaching and learning. If peer learning is to last within an institution, then it needs to be able to adapt and change with changes in approaches to teaching and learning. This suggests a view of the role of the implementer of peer learning becomes one of a facilitator of people’s models of peer learning, a translator and negotiator between the different groups’ views of peer learning.

I have shown that peer learning can be effective in supporting students in their learning and so could be extended to support more students in Further Education. However various elements of the context in which peer learning is used will affect it and so those involved in these settings need to be involved in shaping these schemes to fit with their context.
The different benefits of peer learning to peer facilitators and to the students facilitated suggests that students should have an opportunity to take up both of these roles. This can be done in a variety of ways. Students could be facilitated and act as facilitators within a single scheme, or over time they could be facilitated as they enter the institution and then as they gain experience take on the role of a facilitator.

The change in peer facilitators' understanding of the role of learners indicates that this is a role that should be offered to as many students as possible. However, the evidence that peer facilitators' understanding of teaching did not change shows that peer learning can only be a part of changing approaches to teaching and learning within an organisation. Further, the evidence from the IMs suggests that the success of peer learning within an institution is partly dependent on it fitting with the approach to teaching and learning within that institution.

**Recommendation 1:** Peer learning should not be viewed as a panacea to poor educational performance it is better viewed as a curriculum development tool that can be shaped by managers, teachers and students to fit with the context in which they are working.

**Recommendation 2:** The use of peer learning strategies should be extended within Further Education.

**Recommendation 3:** Those affected by, and who can effect, the implementation of peer learning should be involved in implementing within organisations. This should include institutional managers, teachers, the students who will act as peer facilitators and those who will be facilitated.

**Recommendation 4:** The role of implementers of peer learning involves facilitating the models of peer learning of those involved in the implementation. They need to translate the models of the different groups of participants into the terms of the other groups. They should negotiate to overcome conflicts between these groups.
**Recommendation 5:** Students should be given an opportunity to act as peer facilitators as well as being facilitated by their peers.

### 7.5.2 Implications for researching peer learning

I have investigated the implementation of peer learning within one organisation. This approach needs to be tested in other organisations. This would indicate the extent to which the criterion for the implementation of peer learning was a local achievement and the extent that it is generalisable to other situations.

I have shown the importance of researching peer learning in relation to the wider context of teaching and learning. If it is seen as a separate activity, the relationship between the peer learning and the course it is supporting is lost. However, in this research there was a lack of focus on the experience of the students who are supported through peer learning. If the research focus was broadened to focus on the experience of these students this would help to support the more quantitative evidence on the effectiveness of peer learning.

I have shown that taking on the role of a peer facilitator can develop students constructs of what it is important in learning. However, this research did not examine the effect of peer learning on the students' facilitated and the teachers' involved in peer learning constructs of teaching and learning. Although I have suggested that such involvement is unlikely to affect the constructs of these two groups, an investigation of this would help to define the limits of peer learning's effectiveness.

**Recommendation 1:** The approach to implementing peer learning should be extended to other organisations and evaluated within these different contexts.

**Recommendation 2:** Peer learning could be researched with a focus on the qualitative experience of the students offered peer learning and this put in the context of the quantitative evidence of the effect of their involvement in peer learning.
Recommendation 3: There should be further research into peer learning’s effectiveness in developing participants’ constructs of teaching and learning. In particular research is needed into whether involvement in peer learning affects teachers’ and the students’ facilitated constructs of teaching and learning.

7.5.3 Implications for approaching teaching and learning situations
Teaching and learning, in the view expressed in my research, are seen as parts of a single process. The responsibilities for different elements of the teaching and learning process can be divided between teachers and learners in many different ways. Thus the relationship between teachers and learners is not fixed but can be altered based on the students’ level of experience and expertise. I have presented evidence that shows that the more responsibility students have for their own, and other students’, learning, the more dynamic they see their role as learners. This suggests that it is the teacher’s task to work out, preferably with the students concerned, a division that gives students enough support within the teaching and learning process whilst giving them enough responsibility for this process. This broadens their understanding of the elements involved in being a learner. However, this approach would involve a considerable shift in the approaches teaching and learning and teachers would need to be supported in developing such approaches.

Recommendation 1: Teachers should be supported in developing approaches to teaching and learning which actively divide the roles of teachers and learners based on the educational experience of students rather than using a single division between these roles in all teaching and learning situations.

7.5.4 Implications for researching teaching and learning
This view of teaching and learning suggests that they need to be researched as a single process. This is because the activities and constructs of teachers and learners do not make sense unless they are examined with reference to each other. Thus research into students’ conceptions of learning, whilst producing valuable insights, only examines part of the picture. Students’ definition of learning and tasks that are the responsibility of learners are defined, in part, by their views on teaching and the responsibility of their teachers. These in turn are based on their prior experience of
teaching and learning experiences. This suggests the need for research that examines students’ constructs of teaching and learning and places these in the context of the constructs of teaching and learning of their teachers.

**Recommendation 1:** The approach to researching the significance of peer learning for constructs of teaching and learning could be used to examine the relationship between teachers’ and learners’ constructs within more traditional teaching and learning environments.

### 7.6 Concluding Remarks

In this final chapter I have focused on the outcomes and implications of the research that makes up my PhD. I have examined the elements of originality in this thesis. I have examined the research approach that I took and shown it to be a useful approach in researching peer learning. I have examined my findings about peer learning and examined their implications. Finally I have made recommendations based on the implications of my research for approaching and researching peer learning and teaching and learning more generally.

I have shown the elements of originality contained within my work can be seen in a number of different areas. I have offered a new definition of peer learning that is more rigorous than previous definitions of peer learning. I have developed a new approach to implementing peer learning that could be extended to and tested in other educational institutions. I have added a new component to the elicitation of repertory grids that was effective in producing results on the structure of participants' constructs.

I have developed a new approach to researching peer learning that has been expressed in my criterion for researching peer learning. I have shown that I fulfilled this criterion, which was a useful standard by which to judge research into peer learning. I have shown the importance of examining the implementation, operation and significance of peer learning. The examination of the implementation of peer learning showed the effect of different approaches to peer learning and the importance of
involving managers, teachers and students in the implementation of peer learning. The examination of the operation of peer learning, through the case studies, demonstrated how peer learning is shaped by the context in which it operates. The examination of the significance of peer learning showed how the role of the peer facilitator can challenge traditional understandings of the roles of teachers and learners.

My findings on peer learning again related to the three areas of my research. I found that when peer learning is implemented it needs to fit with the context in which it operates. Whilst students, teachers, and managers all need to be involved in the implementation of peer learning they are not involved in the same way and they have different motives for becoming involved. This implies that the role of the implementer of peer learning involves facilitating the ideas of these different groups and translating the ideas of each group into the language of the other groups. Finally, they need to negotiate when these groups have conflicting aims for peer learning.

I have shown that peer learning can be effective in supporting students, with all levels of prior academic achievement and approaches to studying, in their learning. However, the operation and outcomes of peer learning are affected by the relationship between the peer facilitators and the students facilitated, the structure of the peer learning sessions, and the structure of the course on which peer learning is offered. This re-emphasises the importance of including those involved in the schemes in their design, as they have knowledge of how these factors could affect peer learning.

I showed that peer learning both reflects and has significance for the traditional approaches to teaching and learning. It reflects traditional divisions in two ways. First, the different outcomes for the peer facilitators and the students facilitated reflects the peer facilitators’ teaching role and the students’ facilitated learning role. Second, I have shown that people’s views of teaching and learning inform their views of peer learning. Thus their models of peer learning will be a reflection of the models of peer learning. However, the role of peer facilitator, which involves learning by
teaching, challenges the traditional divisions between the role of teachers and the role of learners. I found that students who took on the role of a peer facilitator began to see learning as a more social process, whilst originally they saw it as an individual and solitary process. This was the view held by their teachers and fellow students. However, the peer facilitators' understanding of teaching did not change and this re-emphasised how peer learning and its outcomes are rooted in the contexts in which they operate.

Finally, I have shown the implication of my work for peer learning and teaching and learning more generally and I have produced recommendations based on these implications. I recommended that the use of peer learning should be extended in further education. In implementing peer learning managers, teachers, and students should be involved in designing an approach that fits with the context in which they operate. They will not all be involved in the same way and at the same level, and it is the implementers responsibility to facilitate, translate and negotiate between these levels. I recommended that given the different benefits to the peer facilitators and students facilitated, students should be given the opportunity to take on both these roles during their academic careers. I have recommended that the research into the three levels of peer learning, the implementation, operation, and significance of peer learning be extended and improved. I have recommended that teachers’ approaches to teaching and learning be developed so that students are allowed to more widely experience the benefits of learning through teaching, and that the research approach that uncovered these benefits be extended to more traditional teaching and learning situations.

However, the most important recommendation is that peer learning is seen as a curriculum development tool rather than as a panacea to poor educational performance. Peer learning is always located within a particular context that affects its approach and outcomes. Peer learning can change this context but the extent of these changes is limited by what is possible within that context. Peer learning, then, is not a magical cure for low levels of retention and achievement. It is rather a tool that
can be used in a number of ways. It can be used in a way that simply mimics traditional approaches to teaching and learning. However, used in another way, it can give students a greater involvement in, and ownership of, not only their learning but also teaching and learning situations more generally.
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264


*This edition was published in 1991, I have kept the original date as published by Norton, New York.


270


APPENDIX I: QUESTIONNAIRE TO STUDENTS OFFERED PS

PEER SUPPORT EVALUATION QUESTIONNAIRE

Please complete this section if you went to any Peer Support sessions

COURSE:

1) What is Peer Support?

2) How many Peer Support sessions did you attend? (Please tick) 1-4 □  5-9 □  10-12 □  13+ □

3) Why did you go to Peer Support?
To improve my grades □  For help with revision □  To get help with homework □
To clarify difficult ideas □  To meet other students □  To understand the subject □
Other, please state:

4) How helpful were the Peer Supporters? How would you rate the Peer Support sessions?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5) Without Peer Support I would have (Please tick): withdrawn from my course □  failed my course □
not done as well on my course □  not enjoyed my course as much □  done better on my course □

6) How did Peer Support help you? Please indicate with a tick (☑) the extent to which you agree with the following statements:

<table>
<thead>
<tr>
<th>Attendance at Peer Support:</th>
<th>Agree Strongly</th>
<th>Agree</th>
<th>Neutral Don't know</th>
<th>Disagree</th>
<th>Disagree Strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helped you understand course concepts</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td>Increased your understanding of what is expected on the course</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td>Increased your communication skills</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td>Increased your listening skills</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td>Increased your understanding of how people learn</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td>Improved your problem solving skills</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td>Increased your motivation</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td>Improved your group work skills</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td>Increased your confidence</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td>Helped to break down barriers with other students</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td>Helped you with revision</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td>Improved your exam technique</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
</tbody>
</table>

279
6) How did Peer Support help you? Please indicate with a tick (☒) the extent to which you agree with the following statements:

| ATTENDANCE AT PEER SUPPORT:
| --- |
| Improved your essay writing

<table>
<thead>
<tr>
<th>Agree Strongly</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Disagree Strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

7) How could Peer Support be improved? What changes would you suggest?

Please complete this section if you did NOT attend any Peer Support sessions.

**COURSE:**

1) What is Peer Support?

2) Why did you not go to Peer Support? (Please tick only one):

- I did not know about it ☐
- I did not have time to go ☐
- I heard that the sessions were not helpful ☐
- My teachers did not support it ☐
- I did not need it ☐
- It was not the type of help I needed ☐

The time was inconvenient as:
- I was working when it was on ☐
- I had a lesson at that time ☐
- It was on at lunch time ☐

3) Please state any other reason for not attending Peer Support:

4) What changes to Peer Support would have made you more likely to attend?

5) What other support would you have wanted on your course?
APPENDIX II: PEER SUPPORT USER QUESTIONNAIRE FOR 2ND YEAR ‘A’ LEVEL SCIENCE STUDENTS

Please answer the following questions as honestly as possible:

1. What was the purpose of Peer Support?

2. Why did you attend Peer Support?

3. What were the sessions like?

4. How helpful was the Peer Supporter?

5. Did you benefit from Peer Support? If so, how?

6. Did Peer Support help you to develop any skills?

7. What changes would you make to improve Peer Support?

8. Do you have any other comments you would like to make about Peer Support?
APPENDIX III: PEER SUPPORT QUESTIONNAIRE

PEER SUPPORTER EVALUATION

Please answer these questions as honestly as possible:

1) How do you rate support meetings? 1 2 3 4 5
   How have they been helpful?
   How could it have be improved?

2) How useful was keeping the journal? 1 2 3 4 5
   How has it been useful?
   How could it be more useful?

3) How do you rate teacher support for PS? 1 2 3 4 5
   What support have you had?
   How could it be improved?

4) What could you have done to improve Peer Support on your course?

5) What changes would make Peer Support more successful on your course?

6) Do you have any other comments about the running of, or your involvement in, Peer Support?
7) To what extent do you agree with the following statements concerning Peer Support

**Peer Support Users**

- Peer Support helped them to settle into the course
  - Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Disagree Strongly

- Peer Support helped them to understand the course content
  - Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Disagree Strongly

- Peer Support improved their communication skills
  - Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Disagree Strongly

- Peer Support improved their problem solving
  - Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Disagree Strongly

- Peer Support increased their motivation
  - Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Disagree Strongly

- Peer Support improved their group work skills
  - Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Disagree Strongly

**You**

- Peer Support has helped me with my revision
  - Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Disagree Strongly

- Peer Support has increased my communication skills
  - Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Disagree Strongly

- Peer Support has increased my confidence
  - Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Disagree Strongly

- Peer Support has increased my understanding of how people learn
  - Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Disagree Strongly

- Peer Support has improved my problem solving
  - Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Disagree Strongly

- Peer Support has increased my motivation
  - Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Disagree Strongly

- Peer Support has improved my group work skills
  - Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Disagree Strongly
APPENDIX IV: QUESTIONS ASKED IN THE PEER SUPPORTER GROUP INTERVIEW

The Peer Supporters discussed these questions as a group. This discussion was recorded and later transcribed. After their discussion the Peer Supporters each wrote their individual answers to the questions.

1. What were the sessions like at the beginning?
2. What were they like at the end?
3. What was the Peer Support Users participation like at the beginning?
4. Did your role in the sessions change in terms of the sorts of things you had to do?
5. How did you learn to be a peer supporter?
6. How did the students benefit from Peer Support?
7. Do you think they developed any skills?
8. How has being a Peer Supporter helped you?
9. What is the difference between Peer Support and teaching?
10. How would you define ‘teaching’?
11. How would you define ‘learning’?
12. Have your views of teaching and learning changed since you have been a Peer Supporter?
## Appendix V: Peer Supporter Journal Outline

### Peer Support

#### Peer Supporter Journal

<table>
<thead>
<tr>
<th>Name:</th>
<th>Course:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aims of Sessions</th>
<th>Planned Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Content of session</th>
<th>Actual Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What did the group learn?</th>
<th>Evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>What did you do well?</th>
<th>What do you want to improve?</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
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</tbody>
</table>
## Appendix VI: A Sample Repertory Grid

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Teacher</th>
<th>Teacher</th>
<th>Teacher</th>
<th>Teacher</th>
<th>Learner</th>
<th>Learner</th>
<th>Learner</th>
<th>Learner</th>
<th>Learner</th>
<th>Learner</th>
<th>Learner</th>
<th>Learner</th>
<th>Learner</th>
<th>Learner</th>
<th>Learner</th>
<th>Ideal Self</th>
<th>Teaching</th>
<th>Learning</th>
<th>Importance in Learning</th>
<th>Importance in Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SELF AS SUPPORTER/TEACHER</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>IDEAL SELF</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX VII: QUESTIONNAIRE TO PEER SUPPORT LINK TEACHERS

PEER SUPPORT
TEACHER QUESTIONNAIRE

1. What were your aims in using Peer Support on your course?

2. Did you feel these aims were met? (Please explain your answer)

3. How much say did you feel you had in the design of the Peer Support scheme:
   Too much □  Just enough □  Not enough □
   Please explain your answer:

4. How did Peer Support affect the performance of the students on their course?

5. How do you think the Peer Supporters were affected by their involvement in the scheme?

6. Were there any problems in the implementation of Peer Support?

7. What changes in Peer Support would make it more successful?
APPENDIX VIII: THE INTERVIEW QUESTIONS FOR THE INSTITUTIONAL MANAGERS

1. What do you see as the purpose of Peer Support?

2. How does that relate to the aims of the college as a whole?

3. What's your view on the implementation strategy?

4. Do you see it changing in the future?

5. How does Peer Support fit with the other learning support the college offers?

6. What do you see as the role of a peer supporter?

7. How would you distinguish the role of a peer supporter from the role of a learner?

8. How would you distinguish the role of a peer supporter from the role of a teacher?

9. What do you see as the difference between teaching and learning?
APPENDIX IX: RICHARDSON’S (1990) APPROACHES TO STUDYING QUESTIONNAIRE

Name:  
Course:

All information is for research purposes only, individual scores will not be revealed to your teachers. This is NOT a test - it is an opportunity for you to show how you approach your studies.

Please indicate with a tick (✓) the extent to which you agree with the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Agree Strongly</th>
<th>Agree</th>
<th>Neutral Don’t know</th>
<th>Disagree</th>
<th>Disagree Strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>I try to relate ideas in one subject to those in others, wherever possible</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>I usually set out to understand thoroughly the meaning of what I am asked to read</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>Ideas in books often set me off on long chains of thought of my own, only slightly related to what I was reading.</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>I like to be told precisely what to do in essays or other assignments.</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>I often find myself questioning things that I hear in class or read in books.</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>The continual pressure of work - assignments, deadlines, and competition - often makes me tense and depressed.</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>I find it difficult to ‘switch tracks’ when working on a problem: I prefer to follow each line of thought as far as it will go.</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>Teachers seem to delight in making the simple truth unnecessarily complicated.</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>I usually don’t have time to think about the implications of what I have read.</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
</tbody>
</table>
Agree Strongly Agree Neutral Disagree Disagree Strongly

In trying to understand a puzzling idea, I let my imagination wander freely to begin with, even if I don’t seem to be much nearer to a solution.  □ □ □ □ □

I generally put a lot of effort into trying to understand things which initially seem difficult.  □ □ □ □ □

I prefer courses to be clearly structured and highly organised.  □ □ □ □ □

A poor first answer in an exam makes me panic.  □ □ □ □ □

In trying to understand new ideas, I often try to relate them to real life situations in which they might apply.  □ □ □ □ □

When I’m reading I try to memorise important facts which may come in useful later.  □ □ □ □ □

I like to play around with ideas of my own even if they don’t get me very far.  □ □ □ □ □

I am usually cautious in drawing conclusions unless they are well supported by the evidence.  □ □ □ □ □

When I am tackling a new topic, I often ask myself questions about it which the new information should answer.  □ □ □ □ □

Often I find I have to read things without having a chance to really understand them.  □ □ □ □ □

In reporting practical work, I like to try to find out several alternative ways of interpreting findings.  □ □ □ □ □

I find I have to concentrate on memorising a good deal of what we have to learn.  □ □ □ □ □

Often when I am reading books, the ideas produce vivid images which sometimes take on a life of their own.  □ □ □ □ □

The best way for me to understand what technical terms mean is to remember the textbook definition.  □ □ □ □ □

I need to read around a subject pretty widely before I put my ideas down on paper.  □ □ □ □ □
Although I generally remember facts and details, I find it difficult to put fit them together in an overall picture.

I tend to read very little beyond what's required for completing assignments.

Having to speak in class is quite an ordeal for me.

Puzzles or problems fascinate me, particularly when you have to work through the material to reach a logical conclusion.

I find it helpful to 'map out' a new topic for myself by seeing how the ideas fit together.

I find I tend to remember things best if I concentrate on the order in which the teacher presented them.

When I am reading material, I generally examine the evidence carefully to decide whether the conclusion is justified.

Teachers seem to want me to be more adventurous in making use of my own ideas.

Thank you for taking the time to complete this questionnaire. If you want any further information about this questionnaire or the way in which the results will be used, then please contact Paul Ashwin on 0181 257 4336 or in Rm. 120, East Ham Campus.
APPENDIX X: PEER SUPPORTER BRIEFING

PEER SUPPORT 1997-8
PEER SUPPORTER BRIEFING

Your role
As a peer supporter you will have the following responsibilities:
• To market the sessions to students
• To prepare for each session
• To run sessions as agreed
• To collect student feedback on each session
• To write up your reflections on each session
• To feedback on each session to the scheme co-ordinator
• To give feedback to course teachers, as required.

Support Mechanisms
To help you in role you will receive the following support:
• An initial briefing on your role
• Observations of your sessions and appropriate feedback
• Regular support sessions with the scheme co-ordinator
• Support from course teachers, as arranged
• Access to any necessary photocopying etc.

Preparation for Sessions
For each session you should consider the following, at least:
• What am I trying to achieve? Why is this relevant to the students?
• How am I going to achieve this? What techniques will I use?
• How am I going to evaluate the session?

Running the Session
In running the session it might be useful to remember the following:
• You are giving the students an hour of your time, it is up to them whether they use it. You are under no obligation to give them time outside the session.
• Start the session on time.
• If students want to focus on a different area than you have planned and you feel able to do this, then do it. The point of the session plan is to help you, not to make the session inflexible.
• If things go wrong learn from them. Ask the students what they feel about the session, and how things could be improved.
• Always give the session a proper ending, tell the students when time is running out and finish on time.
Student Feedback on the Session
It is important to collect student feedback on the session so you can constantly improve the service you offer. It is not collected to make you feel bad, but to find out how you are getting on. How you collect feedback is flexible but it should have the following characteristics:
• Allow students to rate the session numerically, for reporting purposes
• Give the students the opportunity to say what was good, how it could be improved, and suggest changes
• Allow students to write unexpected comments.

Reflections on the Session
The extent to which you achieved your aims with your chosen techniques will form part of your reflection on the session. Use the student feedback as evidence to help you write your reflections. You could also consider how things could be improved.
## APPENDIX XI: PARTICIPANTS IN EACH STAGE OF THE RESEARCH PROCESS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<tr>
<td>Peer Learning Schemes</td>
<td>5</td>
<td>6</td>
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<td>Students Offered Peer Learning</td>
<td>326</td>
<td>414</td>
<td>572</td>
<td>964</td>
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<td>Students who attended ≥ 1 Peer Learning session</td>
<td>76</td>
<td>130</td>
<td>132</td>
<td>395</td>
<td>677</td>
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<tr>
<td>% of students offered Peer Learning who attended ≥ 1 session</td>
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<td>31</td>
<td>23</td>
<td>41</td>
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<tr>
<td>Number of Respondents to Questionnaires to Students who were offered Peer Learning</td>
<td>N/A</td>
<td>N/A</td>
<td>137</td>
<td>299</td>
<td>561</td>
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<tr>
<td>% response rate to questionnaires to students offered Peer Learning</td>
<td>N/A</td>
<td>N/A</td>
<td>24</td>
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<td>Number of Peer Facilitators</td>
<td>11</td>
<td>20</td>
<td>16</td>
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<td>Number of respondents to the questionnaires to peer facilitators</td>
<td>N/A</td>
<td>20</td>
<td>14</td>
<td>27</td>
<td>64</td>
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<tr>
<td>% response rate to the questionnaires to peer facilitators</td>
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<td>100</td>
<td>88</td>
<td>90</td>
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<td>Peer Learning Link Teachers</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>15</td>
<td>17</td>
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<td>Number of respondents to Peer Learning link teachers' questionnaire</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<td>% response rate to Peer Learning link teachers' questionnaire</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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Table XI.1: The participants in 'Implementing Peer Learning'
<table>
<thead>
<tr>
<th>Participants</th>
<th>1997-8</th>
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<tbody>
<tr>
<td>Number of Y1 students</td>
<td>108</td>
</tr>
<tr>
<td>Number of Y1 students who attended ≥ 1 Peer Support session</td>
<td>50</td>
</tr>
<tr>
<td>Number of Y1 students who attended ≥ 5 Peer Support sessions (PSUs)</td>
<td>25</td>
</tr>
<tr>
<td>Number of Y1 students who had GCSE results</td>
<td>105</td>
</tr>
<tr>
<td>Number of Y1 PSUs who had GCSE results</td>
<td>24</td>
</tr>
<tr>
<td>Number of Y1 students who studied Chemistry</td>
<td>47</td>
</tr>
<tr>
<td>Number of Y1 PSUs who studied Chemistry</td>
<td>19</td>
</tr>
<tr>
<td>Number of Y1 students who studied Pure Mathematics and Statistics</td>
<td>25</td>
</tr>
<tr>
<td>Number of Y1 PSUs who studied Pure Mathematics and Statistics</td>
<td>16</td>
</tr>
<tr>
<td>Number of Y1 students who completed the questionnaire to students offered peer learning</td>
<td>72</td>
</tr>
<tr>
<td>% response rate of Y1 students to the questionnaire to students offered peer learning</td>
<td>67</td>
</tr>
<tr>
<td>Number of Y1 students who completed the first ASQ</td>
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</tr>
<tr>
<td>% response rate of Y1 students who completed the first ASQ</td>
<td>60</td>
</tr>
<tr>
<td>Number of Y1 PSUs who completed the first ASQ</td>
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<tr>
<td>% response rate Y1 PSUs who completed the first ASQ</td>
<td>84</td>
</tr>
<tr>
<td>Number of Y1 students who completed the first and second ASQ</td>
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</tr>
<tr>
<td>% response rate of Y1 students who completed the first and second ASQ</td>
<td>32</td>
</tr>
<tr>
<td>Number of Y1 PSUs who completed the first and second ASQ</td>
<td>18</td>
</tr>
<tr>
<td>% response rate of PSUs who completed the first and second ASQ</td>
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</tr>
<tr>
<td>Number of Y1 Peer Supporters</td>
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<tr>
<td>Number of Y1 Peer Supporters who participated in the Focus Group</td>
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</tr>
<tr>
<td>Number of Y1 Peer Supporters who completed the first ASQ</td>
<td>7</td>
</tr>
<tr>
<td>Number of Y1 Peer Supporters who completed the first and second ASQ</td>
<td>7</td>
</tr>
<tr>
<td>Number of Y1 Peer Supporters who completed the first and second Repertory Grids</td>
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</tr>
<tr>
<td>Number of Y2 students</td>
<td>95</td>
</tr>
<tr>
<td>Number of Y2 students who attended ≥ 1 Peer Support session</td>
<td>28</td>
</tr>
<tr>
<td>Number of Y2 students who attended ≥ 5 Peer Support sessions (PSUs)</td>
<td>13</td>
</tr>
<tr>
<td>Number of Y2 students who had GCSE results</td>
<td>84</td>
</tr>
<tr>
<td>Number of Y2 PSUs who had GCSE results</td>
<td>13</td>
</tr>
<tr>
<td>Number of Y2 students who studied Chemistry</td>
<td>34</td>
</tr>
<tr>
<td>Number of Y2 PSUs who studied Chemistry</td>
<td>13</td>
</tr>
<tr>
<td>Number of Y2 students who studied Biology</td>
<td>33</td>
</tr>
<tr>
<td>Number of Y2 PSUs who studied Biology</td>
<td>14</td>
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<tr>
<td>Number of Y2 students who completed the questionnaire to students who used peer learning</td>
<td>7</td>
</tr>
<tr>
<td>% response rate of Y2 students to the questionnaire to students who used peer learning</td>
<td>25</td>
</tr>
<tr>
<td>Number of Y2 students who completed the ASQ</td>
<td>60</td>
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<tr>
<td>% response rate of Y2 students who completed the ASQ</td>
<td>63</td>
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<tr>
<td>Number of Y2 PSUs who completed the ASQ</td>
<td>11</td>
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<tr>
<td>% response rate Y2 PSUs who completed the ASQ</td>
<td>85</td>
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</table>

Table XI.2: The participants in ‘A Case Study of Peer Learning scheme’s and ‘The Significance of Peer Learning for Teaching and Learning’
Appendix XII: A Summary of the Advantages and Limitations of an Action Research Approach

I adopted an Action Research approach in order to investigate how I developed peer learning in Newham College of Further Education.

Advantages of an Action Research Approach

I decided to use an Action Research approach because it had a number of advantages that were relevant to my situation. These were:

1. Action Research focuses on the development of practice, as I was involved in developing peer learning at the college this focus was appropriate for the purposes of my research.

2. An Action Research approach helped me to focus on the effect of my role as the researcher-implementer of peer learning. Past studies have ignored the effect that this role can have on the manner in which peer learning is implemented (see Section 2.4.2).

3. Using Action Research approach emphasised that the implementation of peer learning was an example of organisational change, and helped to focus on the implications of this (See Section 2.4.3).

4. Using an Action Research approach highlighted the importance of involving the people involved in the research in shaping the research process (See Section 4.3).

Limitations of an Action Research Approach

There are a number of criticisms that have been made of Action Research. These are:

1. Action Research studies only produce localised knowledge and so do not generate new knowledge that can be transferred to other situations (Adelman 1989).

2. Action Research Studies do not focus on the context in which they are carried out (Adelman 1989).

3. They tend to be a-theoretical in their approach (Atkinson and Delamont 1985).
I attempted to overcome each of these limitations in my use of Action Research. First, in my development of a criterion for the implementation of peer learning schemes (see Section 2.4.4) I have attempted to develop a tool that can be used to examine the implementation of peer learning in a variety of situations. The extent to which this tool will be applicable to other situations is unproven, but it does appear to offer knowledge that can be transferred to other situations.

Second, in the examination of peer learning schemes I triangulated quantitative and qualitative data in order to consider how the outcomes of peer learning schemes are related to the contexts in which they operate (see Section 5.2.2). However, some of the elements of the context in which peer learning operating were not investigated. For example, in examining peer learning in a single further education college I could not investigate the effects of peer learning operating in a further education context rather than, for example, a higher education context. However, using an alternative to an Action Research approach would not have overcome this problem. This is because it is a problem of carrying out research within a single organisation rather than a problem directly caused by using an Action Research approach to investigating peer learning.

Third, I used Kelly’s (1955) view of persons as personal scientists as the theoretical starting point for my research. His view of persons informed my approach to implementing and researching peer learning (see Section 2.4.2). The extent to which the use of a view of persons can be seen as theoretical may be seen as questionable. This is because, although my research approach was informed by this view of persons, my research questions cannot be seen as being derived directly from a single theoretical position. There are several responses to this. First, the research into peer learning has not developed to a stage where there are clearly identifiable theoretical positions on which to base research. It is common for researchers in this field to use a
variety of different theoretical traditions to understand peer learning (for example, see Topping 1996). Second, even if there were clear theoretical positions from which to derive research questions this would not have been appropriate in this research. My research attempted to investigate peer learning within an organisation in terms of its implementation, operation and wider significance. Using a single theoretical position would not have allowed a consideration of all of the issues that arise at these different levels. Using a view of persons allowed me to have a theoretical underpinning that held the different parts of my research together whilst giving me the flexibility to examine these very different aspects of peer learning.

Finally, in my Research Design I set out how the three parts of my research fit together in a systematic way (see in particular Section 3.6). However, it may appear that, because the types of data I gathered changed over time, I was not systematic in my use of research techniques. For example, it was not until late on in the research that I began to examine teacher’s views of peer learning. However, the development of my research focus was an important element of my research approach. Whilst the focus of my research changed over time, the approach was systematic in terms of the process that I followed. This process is represented by the action research cycle set out in Section 4.3.

To conclude, I used an Action Research approach because it was the most appropriate for the context in which I was researching. The process of researching peer learning was a learning process and so my understanding of peer learning developed over the time that I was researching it (see Section 1.3.2). As I argued in Section 4.7.1, all research involves such learning but an Action Research approach allowed my personal learning to be made explicit. Although there have been criticisms of using an Action Research approach I have shown how I attempted to overcome these in the way that I conducted my research.