

**DEVELOPING AN ACTIVE LEARNING APPROACH FOR THE
GEOGRAPHY PILOT GCSE – AN ACTION RESEARCH
INVESTIGATION**

by
PHILIP BAILEY WOOD

A thesis submitted to The University of Birmingham
for the degree of
DOCTOR OF PHILOSOPHY

School of Education
College of Social Science
The University of Birmingham
January 2011

UNIVERSITY OF
BIRMINGHAM

University of Birmingham Research Archive

e-theses repository

This unpublished thesis/dissertation is copyright of the author and/or third parties. The intellectual property rights of the author or third parties in respect of this work are as defined by The Copyright Designs and Patents Act 1988 or as modified by any successor legislation.

Any use made of information contained in this thesis/dissertation must be in accordance with that legislation and must be properly acknowledged. Further distribution or reproduction in any format is prohibited without the permission of the copyright holder.

ABSTRACT

The present study focuses on the degree to which an innovative GCSE course (the OCR Pilot GCSE in Geography) acted as a basis for active and innovative learning. Using a holistic framework intertwining curriculum, learning and assessment, a collaborative action research approach was used to develop an active and innovative learning environment, focusing on the work of two groups of GCSE students following the Pilot GCSE course. A conscious adoption of personalised learning approaches, linked to a radical notion of the nature and content of geography and an alternative assessment regime, led to the development of a course founded on the integrated use of information and communication technology alongside independent learning approaches. These developments in active engagement were based on student perceptions of their own preferences with regards to learning and assessment.

The action research took place over three cycles, and the results demonstrate that with the curriculum approach inherent in the Pilot GCSE specification, the development of active learning and authentic assessment opportunities were not only possible, but in keeping with the philosophy of the course. There is less evidence that the emerging classroom pedagogy allowed students to deepen their investigation of geography, although there is some qualitative evidence for this.

Acknowledgements

I wish to thank a number of people who have made the production of the present study possible. Dr Graham Butt and Paul Weeden have both provided much needed support and expertise throughout the research process and write-up of this project, as well as posing frequent questions and queries which have played a central part in developing my thinking and writing. I would also like to thank Claire for her continued acceptance of regular absence, both physical and mental, whilst I developed my work, and also for proof-reading my thesis, a joint venture with my dad. To Meg and Archie, hopefully, I'll be able to spend a little more time being dad from now on! Finally, to the students with whom I created the learning in this work; they were a constant source of surprise, humour and insight and played a major role in developing my view of both my own teaching, and learning as a process.

CONTENTS

	Page No.
Chapter 1 – Introduction	1-8
1.0 Overview	1
1.1 Importance of the current research	5
1.2 Outline of the current work	7
Chapter 2 – Literature Review	9-97
2.0 Introduction	9
2.1 Curriculum	10-32
2.1.1 Introduction	10
2.1.2 The changing nature of the geography curriculum	17
2.1.3 The Geography Pilot GCSE Curriculum – an Outline	24
2.1.4 A Brief outline of the Pilot GCSE	25
2.1.5 Initial evaluations of the Pilot GCSE Curriculum	28
2.1.6 Conclusion	31
2.2 Learning	32-65
2.2.1 Introduction – Research into learning	32
2.2.2 The foundations of personalisation	36
2.2.3 Defining the practice of personalised learning	45
2.2.4 The classroom level of personalisation	48
2.2.5 Initial results form the Pilot concerning learning and teaching	63
2.2.6 Conclusion	65
2.3 Assessment	66-97
2.3.1 Introduction – assessment in a performative era	66
2.3.2 Defining assessment	69
2.3.3 Assessment for Learning - Background	73

2.3.4 Assessment for Learning – Considering practice	77
2.3.5 Critiquing assessment for learning	86
2.3.6 Initial results from the Pilot concerning assessment	90
2.4 Synthesis and Research Focus	93

Chapter 3 Research Methodology 98-152

3.0 Aims and Objectives of the Research	98
3.1 Research in Education	98
3.2 Methodological Research Traditions	101
3.2.1 Epistemology	102
3.2.2 Ontology	104
3.2.3 Human Relationships	105
3.2.4 Methodology	106
3.3 Action Research	111
3.4 Organisational and educational context	119
3.4.1 Personal and organisational context	119
3.4.2 Sample	121
3.5 Introduction to methods of data collection	122
3.5.1 Questionnaires	124
3.5.1.1 Aims and Objectives of the Baseline	125
Questionnaire	
Survey	
3.5.1.2 Questionnaire Design	126
3.5.1.3 Questionnaire used at the end of Cycle 1	127
3.5.1.4 Questionnaire used at the end of Cycles 2 and 3	128
3.5.2 Interviews	129
3.5.2.1 Preparation for Interviews	132
3.5.2.2 Transcription of Interviews	133
3.5.3 Reflective student diaries	134
3.5.4 Exemplars of work	134

3.6 Data analysis	135
3.6.1 Evaluation of data analysis and research design	135
3.6.2 The role of gender in data analysis	137
3.7 Ethical considerations	147
3.7.1 Informed consent	148
3.7.2 Autonomy of participants	149
3.7.3 Anonymity and confidentiality	149
3.7.4 Research with vulnerable groups	150
3.8 Conclusion	152
Chapter 4 - Baseline Results	153-285
4.0 Introduction	153
4.1 Learning in Geography	153
4.1.1 Year 7	153
4.1.2 Year 9	160
4.1.3 Year 11	166
4.1.4 Analysis of student learning patterns in geography	168
4.2 Assessment	169
4.2.1 Year 7	170
4.2.2 Year 9	176
4.2.3 Year 11	183
4.2.4 Discussion	187
4.3 General discussion	189
4.4 Action Research - Cycle 1	191
4.4.1 Introduction	191
4.4.2 Intervention	192
4.4.3 Results	198
4.4.4 Discussion	200
4.4.5 Conclusions	203
4.5 Cycle 2 – First Full Intervention Cycle	206
4.5.1 Introduction	206
4.5.2 Cycle 2 Intervention	209

4.5.2.1 Year 9 Core Intervention	209
4.5.2.2 Year 10 options intervention	211
4.5.3 Results	217
4.5.3.1 Year 9	217
4.5.3.1 Year 10	227
4.5.4 Discussion	239
4.5.5 Conclusions	242
4.6 Cycle 3 – Second Full Intervention Cycle	246
4.6.1 Introduction	246
4.6.2 Cycle 3 Intervention	246
4.6.2.1 Year 9 Core Intervention	246
4.6.2.2 Year 10 Options Intervention	250
4.6.3 Results	255
4.6.3.1 Year 9	255
4.6.3.2 Year 10	267
4.6.4 Discussion	279
4.6.5 Conclusion	283
Chapter 5 – Discussion and Conclusions	286-316
5.0 Introduction	286
5.1 To what extent can learning, assessment and curriculum be developed to focus on active learning approaches?	287
5.2 What are student perceptions of a developing and re-formed pedagogy?	292
5.3 To what extent does a reformed notion of classroom pedagogy allow students to deepen their investigation of geography?	303
5.4 Conclusions	305
5.5 Future Research	312
5.6 Evaluation of the research undertaken	314
5.7 Concluding remarks	315
Appendices	317-3
Appendix 1 – Questionnaire focusing on student perceptions of geography	317

Appendix 2 - Questionnaire focusing on student perceptions of assessment	319
Appendix 3 – End of Cycle 1 questionnaire	322
Appendix 4 – Questionnaire used at the end of Cycles 2 & 3	324
Appendix 5 – Parental consent letter for taking part in questionnaires	327
Appendix 6 – Parental consent letter for taking part in keeping reflective diaries	329
Appendix 7 – Parental consent letter for taking part in interviews	331
Appendix 8 – My Place Scheme of Work	333
Appendix 9 – Advertising agency advertising exercise outline	337
Appendix 10 – Coasts scheme of work	339
Appendix 11 – Fieldwork scheme of work	343
Appendix 12 – Outline for coasts catalogue portfolio	346
Appendix 13 – Coasts textbook extract	348
Appendix 14 – Fieldwork textbook extract	350
Appendix 15 – Extreme environments portfolio outline	352
Appendix 16 – Cultural geography scheme of work	356
Appendix 17 – Travel and tourism scheme of work	362
Appendix 18 – Outline for group exercise for cultural geography scheme of work	368
Appendix 19 – Travel and tourism exercise exemplar	370

References	373-398
-------------------	----------------

List of Figures

	Page No.
Figure 2.1, Curriculum theory, behaviourist theories of learning and scientific measurement - the dominant 20 th century U.S. model (from Shepard, 2000, p. 6)	11
Figure 2.2 An emergent 21 st century model of the interdependence of curriculum, learning and assessment (Shepard, 2000, p.8)	13
Figure 2.3 Common themes in definitions of personalised learning	46
Figure 2.4 A basic enquiry based learning Cycle for a discrete investigation (based on Roberts, 2006, p.93)	50
Figure 2.5 Some types of fieldwork. Source: Job, D.A. (1996) Environmental Education in Kent, A. et al. Geography in Education, p. 34.	52
Figure 2.6 The contrasting paradigms of learning (formative) and measurement (summative) approaches to assessment (taken from Broadfoot (2007), p.79)	71
Figure 2.7 Audiences for assessment: Conceptualising the purpose of assessment as it is relevant to those who utilise it.	72
Figure 2.8 Synthesised model of curriculum, learning and assessment (based on Stenhouse, 1975; and Shepard, 2000)	95
Figure 3.1 Practitioner, researcher and policy-maker knowledge (Watkins and Mortimore, 1999)	99
Figure 3.2. The bipolar distinction between objective and subjective modes of research.	107
Figure 3.3. An action research Cycle (McNiff and Whitehead, 2006, p.9)	113
Figure 3.4 The use of multiple research cycles in action research development	115
Figure 4.1 Summary of some preferred learning approaches in Year 7	154
Figure 4.2 Summary of level of confidence in learning approaches in Year 7	155
Figure 4.3 Levels of confidence by learning approach for mid and high ability girls, Year 7	159
Figure 4.4 Levels of confidence by learning approach for ability bands of boys, Year 7	159
Figure 4.5 Summary of some preferred learning approaches in Year 9	161
Figure 4.6 Summary of level of confidence in learning approaches in Year 9	162
Figure 4.7 Summary of some preferred learning approaches in Year 11	167
Figure 4.8 Summary of level of confidence in learning approaches in Year 11	168
Figure 4.9 Assessment type preferences for the whole Year 7 cohort	170
Figure 4.10 Feedback preference for Year 7 by sex	172
Figure 4.11 Perceptions of assessment in Year 7 by sex	174
Figure 4.12 Assessment style preferences for the whole Year 9 cohort	177
Figure 4.13 Feedback preference for Year 9 by sex	179
Figure 4.14 Perceptions of assessment in Year 9 by sex	181

Figure 4.15 Assessment style preferences for Year 11	184
Figure 4.16 Feedback preference for Year 11 by sex	186
Figure 4.17 Perceptions of assessment in Year 11 by sex	187
Figure 4.18. Outline of the elements of the website to be used by students (screen captures are for illustrative purposes only)	194
Figure 4.19: Outline of differentiation framework for tasks (screen captures are for illustrative purposes only)	197
Figure 4.20: Results for all students reflecting on web based activities	199
Figure 4.21: Percentage agreement by sex for questionnaire	200
Figure 4.22 Expected grades for Year 9 and 10 groups based on Fisher Family Trust targets (package D)	208
Figure 4.23 Screen shots of the coasts gallery website	214
Figure 4.24 Example of formative feedback given to students	215
Figure 4.25 Students' perception of the level of feedback received in Cycle 2, Year 9	218
Figure 4.26 Students' perception of the quality of feedback received in Cycle 2, Year 9	219
Figure 4.27 Students' perception concerning the use of e-feedback in Cycle 2, Year 9	220
Figure 4.28 Students' perception of their level of learning in Cycle 2, Year 9	223
Figure 4.29 Students' perception of their level of enjoyment in the use of ICT in Cycle 2, Year 9	224
Figure 4.30 Students' perception of their level of independence in Cycle 2, Year 9	225
Figure 4.31 Optional unit choice Year 10	228
Figure 4.32 Students' perception of the level of feedback received in Cycle 2, Year 10	230
Figure 4.33 Students' perception of the utility of feedback received in Cycle 2, Year 10	231
Figure 4.34 Students' perception of the utility of e-feedback in Cycle 2, Year 10	233
Figure 4.35 Students' perception of the degree to which they understood the work in Cycle 2, Year 10	234
Figure 4.36 Students' perception of their use of ICT in Cycle 2, Year 10	235
Figure 4.37 Students' perception of the level to which they worked independently in Cycle 2, Year 10	237
Figure 4.38 Students' perception of the utility of the options booklet in Cycle 2, Year 10	239
Figure 4.39 Students' perception of the level of feedback received in Cycle 3, Year 9	257
Figure 4.40 Students' perception of the utility of feedback received in Cycle 3, Year 9	258
Figure 4.41 Students' perception of the level to which they had understood the work in Cycle 3, Year 9	260
Figure 4.42 Students' perception of the level to which they had enjoyed the use of ICT in Cycle 3, Year 9	262

Figure 4.43 Students' perception of the level of their independence in Cycle 3, Year 9	263
Figure 4.44 Distribution of results in comparison to expected grades, Year 9	267
Figure 4.45 Students' perception of the level of feedback received in Cycle 3, Year 10	268
Figure 4.46 Utility of Feedback given to Year 10 students during Cycle 3	269
Figure 4.47 Students' perception of the level to which they understood the work in Cycle 3, Year 10	272
Figure 4.48 Students' perception of the degree to which they enjoyed the use of ICT in Cycle 3, Year 10	273
Figure 4.49 Students' perception of their level of independence in Cycle 3, Year 10	274
Figure 4.50 Students' perception of the utility of the options booklets in Cycle 3, Year 10	275
Figure 4.51 Distribution of results in comparison to expected grades, Year 10	279
Figure 5.1 Synthesised model of curriculum, learning and assessment (based on Stenhouse, 1975; and Shepard, 2000)	288
Figure 5.2 Conceptual framework merging the synthesised curriculum/learning/assessment model (p.92 based on Stenhouse, 1975, Shepard, 2000) and main results from the action research cycles	312

Tables

	Page No.
Table 2.1 Three models of teaching, learning and assessment (from Fish and Coles, 2005, based on Stenhouse, 1975, p.69-70)	15-16
Table 2.2 Organisational and communal orientation of schools (Fielding, 2006, p.354)	42
Table 2.3 Definitions of the practical school level basis for personalised learning.	46
Table 2.4 Synthesis of models of increasing autonomy by Eccelstone (2002) focusing on post-16 education, and Butts (2004) focusing on the development of gifted and talented students in the USA.	56
Table 2.5 Contrasting conceptualisations of assessment (taken from Broadfoot (2007), p.67)	68
Table 2.6 The links between the role of the teacher, views of learning and the dynamics of feedback (taken from Askew and Lodge (2000))	83-84
Table 2.7: Differing views of assessment for learning (based on Hargreaves, 2005)	89
Table 3.1 The timetable for research and practice development	122
Table 4.1: Correlation between responses given by boys and girls	154
Table 4.2: Correlation between responses given by boys and girls taking ability grouping into account	156
Table 4.3: Correlation between responses given by boys and girls taking ability grouping into account	157
Table 4.4: Correlation between responses focusing on confidence given by boys and girls taking ability grouping into account	158
Table 4.5: Correlation between responses given by boys and girls	160
Table 4.6: Correlation between responses given by boys and girls taking ability grouping into account (Green - low ability, blue – mid ability, red – high ability)	163
Table 4.7: Learning preferences Correlation between responses given by boys and girls taking ability grouping into account	164
Table 4.8: Correlation between responses focusing on confidence given by boys and girls taking ability grouping into account	165
Table 4.9: Correlation between responses given by boys and girls	166
Table 4.10 Correlation of preferences of assessment types by sex and ability, Year 7	171
Table 4.11 Correlation of preferences of feedback types by sex and ability, Year 7	173
Table 4.12 Correlation of perceptions of assessment by sex and ability, Year 7	175
Table 4.13 Correlation of preferences of assessment types by sex and ability, Year 9	178
Table 4.14 Correlation of preferences of feedback types by sex and	180

ability, Year 9	
Table 4.15 Correlation of perceptions of assessment by sex and ability, Year 9	182
Table 4.16 Assessment regimes for optional units	229
Table 4.17 Year 9 Average Core Course Results by Sex	266
Table 4.18 End of Course Results for Year 10 by Sex	278

Chapter 1 - Introduction

1.0 Overview

This study focuses on the development of a holistic approach to the Pilot Geography GCSE based on a consideration of curriculum, learning and assessment as intertwined elements of a wider pedagogical model. As such, it considers curriculum, development, personalised learning and assessment for learning as allied elements of an emergent approach to a GCSE course. The Pilot Geography GCSE was a Qualification and Curriculum Authority (QCA) initiative developed to offer a modernised and alternative view of the subject when compared to the mainstream specifications which had been available for many years.

Mayer (1998) in a paper on the cognitive, metacognitive, and motivational aspects of problem solving argues that school students are often very good at the retention of information as they move through their studies, based on the learning of procedures and content in an often linear and shallow form. For example, in geography this might include the memorization of the stages of meander development, or the impacts of globalisation on local economic activities in the area where the students live. But all too often this learning is not developed to aid understanding, and is not available for use in different contexts. Mayer argues that students tend to be poor at transferring knowledge to new situations. Tan (2007) reflects this view in the reporting of research focusing on the development of problem based pedagogies, arguing that there are two 'axes' of the mind; the first, the 'axis of habit' is where learning through structured routine and memory occurs, the second, the 'axis of

novelty', is where learning occurs through dealing with situation and newness.

Whilst accepting that both are important, Tan argues that it is through the generation of 'problem spaces', time and opportunity to engage with real world problems, that deep learning occurs.

The views given above emphasise approaches to learning which focus on the development of deep learning and transference, but such opportunities all too often appear to be a long way from the day to day experience of teachers in English schools. Galton and MacBeath (2008) identified a strong belief amongst a sample of teachers in the secondary sector that teaching had to follow formulaic lesson structures and teachers had little room to innovate and develop a critical understanding of learning. Allen and Ainley (2007) believe the English education system has seen learning 'warped to become primarily an instrumental activity' (p.104) where the success of a teaching career is measured merely on the results students attain at the end of a course. This instrumentalism is then blamed for a narrow approach to learning which is based on shallow retention of knowledge rather than deep understanding of concepts and ideas. Even day to day use of assessment for learning can be called into service in this instrumental manner as evidenced by Torrance (2007) who argues that learning objectives, assessment criteria and feedback, if used in a narrow manner can actually stall the advantages which assessment for learning was meant to promote. Further, Wilkins and Wood (2009) argue that the introduction of the self-evaluation form in schools has placed an internal inspection team in each school, thereby enshrining a primary focus on results. As Galton and MacBeath (2008, p.56) state:

‘While in rhetoric, and enshrined in the publications of the National College of School Leadership (NCSL), we have emerged from the dark era of managerialism into the enlightened age of leadership, Workforce Reform seems to have driven schools backwards, at least in the secondary sector, to a business-like concern for efficiency rather than effectiveness, for delivery rather than growth, for executive decision-making rather than consultation.’

What this suggests is a view of learning and assessment which has developed in reaction to perceived managerial imperatives. Pring et al (2009) further contend that as complaints become ever more vocal concerning the quality of learning in schools, the general political response is to create ever more complex frameworks of qualifications, leading to changes and prescriptions of curricula, in terms of focus, content and approaches.

However, the apparent development of an increasingly instrumental and narrow triumvirate of curriculum, learning and assessment seems at odds with the evolving view of international bodies concerning the aims and rationales of education systems. A belief in the rise of the ‘knowledge-based-society’ has led organisations such as the Organisation for Economic Co-operation and Development (OECD) to see learning, creativity and innovation as central to economic and social success (OECD, 2008). They argue that:

‘...too many of today’s schools are not adequately fostering deep knowledge, creativity and understanding: they are not well aligned with the knowledge economy and society of the 21st century’

(OECD, 2008, p.3)

In the autumn term of 2001, I took the position of subject leader in geography at a large comprehensive school in south Lincolnshire. The school at that time had a well developed assessment system which entailed teaching staff uploading eight to ten numerical marks to a computer system over the course of each academic year. At the end of the year, the data was used to calculate which students had met their targets (based on teacher expectation) and who had not. These results were then published to *all* staff each autumn, thus making public the extent to which any single teacher had been successful in helping students reach their targets. The Key Stage 3 curriculum was content heavy and very traditional in nature and the assessment of the learning was narrow in approach. As a consequence of the curriculum and assessment regimes, married to the focus on test results to demonstrate competence, several colleagues admitted that much of the learning in the subject area was teacher led and didactic. This was not only the case at Key Stage 3, but also occurred in an intensified manner at GCSE. Here too, there existed a traditional curriculum which was content driven and content heavy (the department followed the OCR Bristol Project specification), which had a largely individual, externally assessed assessment regime. These factors had led to a tendency within the department towards a pedagogical approach which relied on teacher exposition and textbook work, enshrined in long and medium term planning for the course.

In the September of 2003 the department was accepted as one of the first 18 schools to teach the new Pilot GCSE qualification offered through OCR in partnership with the Qualification and Curriculum Authority (QCA). The philosophy of the course had been the impetus for my application to be involved, linking a more up-to-date

selection of content with a new assessment regime (discussed further in Chapter 2), resulting in the innovative development of both curriculum and assessment. The curriculum and assessment regimes have both been consciously developed to encourage alternative learning approaches. It was this blend of innovation potential across the elements of curriculum, learning and assessment which encouraged me to become involved in the Pilot GCSE. This was important to me as a practitioner as it was based on the primacy of experience in learning (Bennetts, 2005), and 'deep' learning (Mayer, 1998) which are the approaches to learning which I believe to be most important in developing independent, critical learners.

1.1 Importance of the current research

The present research is based on three action research Cycles completed in the third year of my teaching of the Pilot GCSE in geography. The Cycles considered here were focused on making a conscious and considered change in classroom pedagogy in an attempt to develop the learning of students, aiming to engender some of the skills and perceptions which organisations such as the OECD consider to be increasingly crucial for individuals in the 21st century, such as independence in learning, creativity and transferable skills.

At the time of the research, Charles Leadbetter (2004) had introduced the concept of personalised learning, based on principles of greater student voice, assessment for learning and the development of new learning approaches. There has been much criticism of the concept (Fielding, 2006; Campbell et al. 2007), but this research uses

some of the approaches suggested through the work of Leadbetter and Hargreaves (2004) as part of the basis for considering a different pedagogic model for the classroom. Bentley and Miller (2006) argue that there is a two-fold ambition for personalisation: to make personalised learning a practical reality, and to link it to a wider notion of personalisation of public services across society. This research was in part focused on attempting to begin to realise on a small-scale the first ambition, and as such move beyond case studies of isolated elements of personalised learning towards a more integrated classroom exemplar. This was developed by fusing elements of personalised learning with a combined consideration of curriculum, learning and assessment to develop a contextualised model of an alternative pedagogy to that experienced previously in meeting the demands of a mainstream GCSE specification.

The central importance of the current research is to open up a debate about the synergies between curriculum, assessment and learning. This is of importance given the OECD's (2008) assertion that learning in the 21st century needs to foster deep understanding and creativity, a message which is consistently reiterated by U.K. politicians (Hansard, 2009, uncorrected evidence 155). This seems at odds with recent changes in subject specifications which only allow for a predominance of external assessment in the form of examinations, and the related continued concern that learning suffers as a result (Galton and MacBeath, 2008).

1.2 Outline of the current work

The current work is developed in the following way:

Chapter 2 – Literature Review: This chapter analyses the literature focusing on curriculum, learning and assessment. It starts by considering the overarching conceptualisation of pedagogy given by Stenhouse (1975) which offers two alternative models of how curriculum, learning and assessment operate together as a basis for planning subject courses, and relates this research to the more recent focus on assessment as a part of pedagogy developed by Shepard (2000). Building on this initial conceptualisation, curriculum is focused upon by considering the nature of the Pilot GCSE within a historical context of geographical curriculum development. Learning is then considered by offering a critique of personalised learning, and understanding how it might relate to the work of Stenhouse. Finally, assessment is considered through the concept of assessment for learning, and the opportunities it affords for the development of learning within the classroom.

Chapter 3 – Methodology: This chapter sets out and critiques the approach of action research before outlining the methods and sampling used to collect data. It also considers how issues of research ethics were taken into consideration.

Chapter 4 – Results: This chapter initially summarises baseline results focusing on the perceptions of learning and assessment in geography gained from students in Years 7, 9 and 11. These results are then considered in the development of

interventions, described, discussed and assessed across three subsequent cycles of action research.

Chapter 5 – Discussion: This chapter develops a discussion of the results gained from the action research cycles, particularly focusing on the development of an alternative pedagogical approach in relation to the models of Stenhouse and Shepard, before also considering the extent to which the pedagogy can act as a basis for a personalised approach to learning.

Chapter 6 – Conclusion: The final chapter assesses the outcomes and potential of the research, and also offers avenues for further research which might build upon the research described here.

Chapter 2 – Literature Review

2.0 Introduction

The Geography Pilot GCSE offers a new and different type of curriculum in comparison to its immediate predecessors through its focus on a conceptually driven content which allows for, if not enshrines, a view of learning and assessment which is based on deep understanding and alternative modes of assessment.

'[the specification] builds upon the foundations laid in the earlier key stages of the candidates' geographical education especially at KS3. The depth of understanding relating to the organising concepts required by this specification and the transferability of this learning to different contexts will allow progression into the post-16 phase of education.'

(OCR, 2003, p.7)

In attempting to develop a different pedagogical approach, this research considers three main potential vehicles for change: curriculum, learning and assessment. In attempting to develop an approach to learning in the classroom, a theoretical framework which embraces these three areas is required, and it is therefore these elements of pedagogy that the present literature review focuses on. Consideration is also given to the policy contexts of the areas of curriculum, learning and assessment as they are the contextual foundation on which the action research presented is built.

2.1 Curriculum

2.1.1 Introduction

Marsh (2004) highlights the difficulty involved in defining the meaning of the term 'curriculum'. Many educationalists have offered differing definitions. Indeed, Portelli (1987) believes more than 120 definitions exist in the research literature as authors attempt to clarify its meaning. However, Marsh (2004) rather than giving a simple (and potentially vague) definition of curriculum instead identifies several important features which need to be included in developing the concepts of curriculum planning and development, being:

- Curriculum frameworks, defined as '...a group of related subjects or themes, which fit together according to a predetermined set of criteria to appropriately, cover an area of study.' (Marsh (2004) p.19).

- Objectives, learning outcomes and standards, the goals of the curriculum.

- The selection and organisation of teaching and learning modes.

- Assessment, grading and reporting

- Curriculum implementation

At the core of this conceptualisation of curriculum development are conscious decisions which need to be made about the approaches to learning and assessment driven by the philosophy of the curriculum and the intended outcomes which are given. For the curriculum to have a coherent form it needs to take into account the role played by the teacher, and the relationship that this role has both to the

learning activities employed and the nature of assessment (not only as an end-point summative exercise, but as a tool for supporting learning itself).

Shepard (2000) highlights the interdependence of curriculum, learning and assessment through a consideration of the changing nature of classroom assessment within the U.S. education system. She embeds the changing dynamics of assessment within its wider context with learning and curriculum over approximately the past 100 years. The 20th century is identified as being dominated by a curriculum informed by social efficiency, together with learning driven by behaviourist psychological theories. As a consequence, assessment becomes a process of scientific measurement, primarily through the use of media such as IQ tests. (see Figure 2.1)

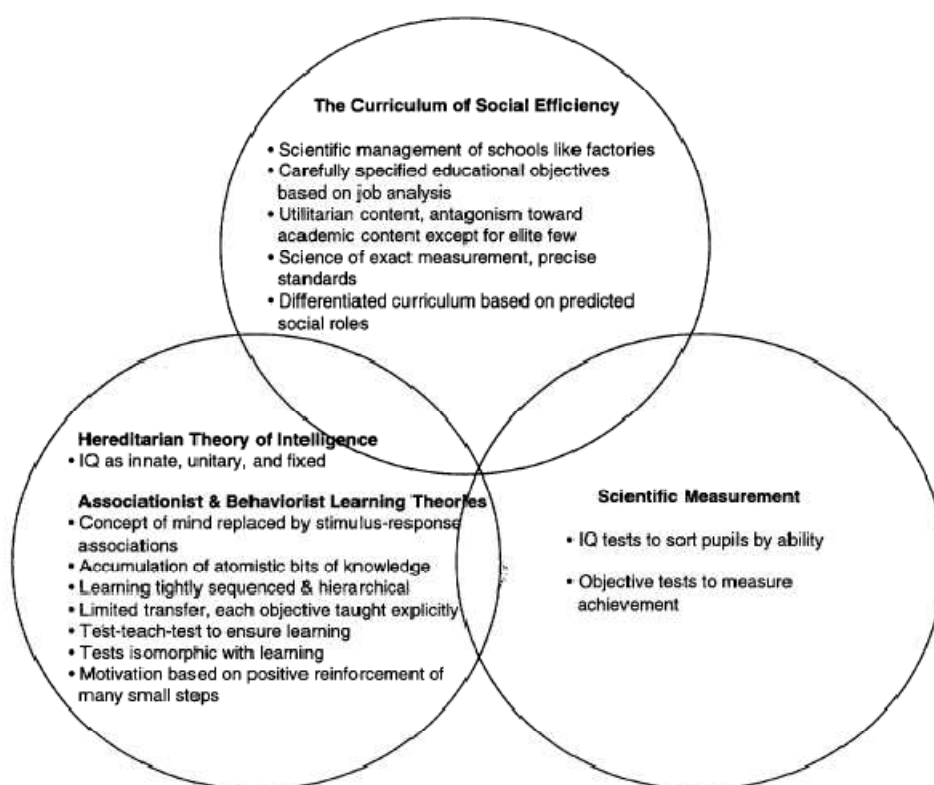


Figure 2.1, Curriculum theory, behaviourist theories of learning and scientific measurement - the dominant 20th century U.S. model (from Shepard, 2000, p. 6)

However, Shepard further argues that through the ascent of constructivism to a dominant place in learning theory, the validity of a learning approach relying on behaviourism has been called into question. A new model of learning has emerged leading to a renewed consideration of how curriculum, learning and assessment must be jointly conceptualised within the classroom (Figure 2.2).

In this emergent model, curriculum has moved away from being characterised as 'social efficiency' which stresses a narrow, utilitarian focus where learning and assessment are characterised by a content and test driven approach with achievement at its centre. Instead, the curriculum is viewed as a vehicle for developing all children in a wider social context which stretches beyond school, and which challenges them to play a central role in their own learning, as opposed to acting as 'passive recipients'. This results in a learning approach which values deep understanding, personal and social construction of knowledge, and an assessment regime which is embedded in the learning process as well as acting as a summative measure.

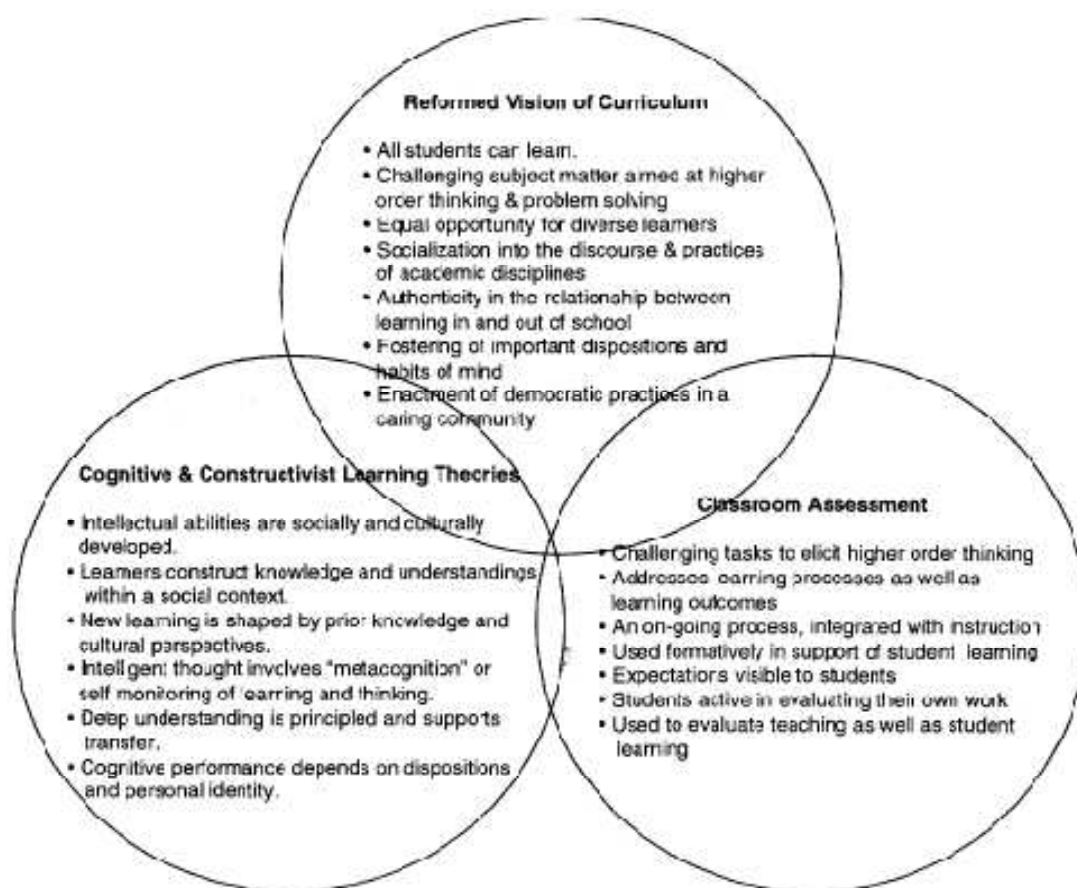


Figure 2.2 An emergent 21st century model of the interdependence of curriculum, learning and assessment (Shepard, 2000, p.8)

The work of Shepard (2000) therefore offers two contrasting approaches to curriculum conceptualisation and development whilst making explicit the inherent link between curriculum, learning and assessment. However, the models presented do not allow for the role of the teacher as an important, and perhaps primary, agent in making choices concerning the curriculum that students will follow. Teachers should not be seen as mere deliverers of the curriculum, but as active agents who have the professional ability and responsibility to develop a view of how they believe their subject can be engaged with, and to make that belief concrete. Lawrence Stenhouse (1975) argues that,

'...I have identified a curriculum as a particular form of specification about the practice of teaching and not as a package of materials or a syllabus of ground to be covered. It is a way of translating any educational idea into a hypothesis testable in practice. It invites critical testing rather than acceptance.' (p.142)

Stenhouse's view shows that we cannot conceptualise the interdependence of curriculum, learning and assessment without including the teacher as a part of the system, acting as a reflective practitioner who strives to develop and test new ways of encouraging learning. In considering curriculum approaches, Stenhouse (1975) argues that contrasting notions of education exist informing a spectrum of approaches taken in the classroom. Firstly, he identifies the 'objectives model' of curriculum, characterised by behaviourist approaches to learning, resulting in the teacher as a transmitter of knowledge to passive recipients. The knowledge which is transferred in this way is then tested periodically to ascertain levels of memorisation. As a result, education can be seen as a 'product', the degree of knowledge retention being the measure of success. This characterisation of education is very similar to Shepard's (2000) model of U.S. education during the 20th century (see Figure 2.1). However, a second, alternative approach to curriculum is offered, focused on the *process* of learning, what Stenhouse (1975) terms the 'process model'. Here, the teacher promotes knowledge, but students take an active role in their learning, being given problems to solve, and resources which are contextually specific and learner-centred. As such, in this model of curriculum development, the teacher becomes a facilitator rather than the performer through which all knowledge flows. In this way the process model can be seen as very similar to Shepard's (2000) emergent conceptualisation of a new U.S. education system (see

Figure 2.2). A third, more radical alternative is also offered. This is the approach of education 'as research', where the process of making the curriculum more learner centred is taken to the opposite end of the spectrum from the objectives approach. Here, the teacher is actually part of a wider learner group with less overt leadership, and the students play an equal role in developing and navigating the curriculum and the learning and development this entails. Table 2.1 shows the summary elements of each of the three curriculum development approaches as identified by Stenhouse (1975) and summarised by Fish and Cole (2005).

<i>Education as a product</i>	<i>Education as a process</i>	<i>Education as research</i>
<i>Intention</i>	<i>Intention</i>	<i>Intention</i>
Teacher transmits knowledge	Teacher promotes knowledge	Learners explore understanding
<i>Locus of knowledge</i>	<i>Locus of knowledge</i>	<i>Locus of knowledge</i>
Resides in teacher	Resides in teachers and learners	Resides in learner group
<i>Student activities</i>	<i>Student activities</i>	<i>Student activities</i>
Passive learners (covers material fast)	Active learners (active learning takes longer)	Aware of selves as active learners and negotiators (this takes even longer)
<i>Motivation via</i>	<i>Motivation via</i>	<i>Motivation via</i>
Teacher	Own active learning	Group learning/active learning
<i>Sees learner as</i>	<i>Sees learner as</i>	<i>Sees learner as</i>
Receiver of knowledge	Active seeker of knowledge	Discoverer/reconstructor of own knowledge
<i>Sees teacher as</i>	<i>Sees teacher as</i>	<i>Sees teacher as</i>

Teller/instructor	Seeker/catalyst	Facilitator/neutral chair
<i>Teaching activities</i>	<i>Teaching activities</i>	<i>Teaching activities</i>
Lecturing	Facilitating learning, sets up problems, probably knows answers	Teacher is leader within group but learns alongside them
<i>Sees assessment as</i>	<i>Sees assessment as</i>	<i>Sees assessment as</i>
End of course tests, summative, teacher assessment	Part of teaching, part of learning, formative and summative	Self-assessment, group assessment, aiding understanding
<i>Plans by means of</i>	<i>Plans by means of</i>	<i>Plans by means of</i>
Aims, objectives, detailed method for whole session, summative assessment	Aims, intentions, principles of procedure, list of content, assessment as part of this process	Aims, intentions, a negotiated agenda, counselling-type methods, assessment within this process
<i>Use of resources</i>	<i>Use of resources</i>	<i>Use of resources</i>
Chosen by teacher and brought into the learner's context from outside by the teacher, and thus may not relate to learner's context	Learner-centred and thus inevitably arising from the learner's context and relevant to it	Learner organised and thus chosen from the learner's context
<i>View of professional</i>	<i>View of professional</i>	<i>View of professional</i>
Teacher is a performer whose performance is significant in the quality of learner's education	Teacher is a facilitator who sets up learning for learners and whose input features less in the sessions	Teacher is a facilitator who learns alongside learners but this can only be on a highly disciplined basis

Table 2.1 Three models of teaching, learning and assessment (from Fish and Coles, 2005, based on Stenhouse, 1975, p.69-70)

In developing an approach to the Geography Pilot GCSE, the conceptualization of curriculum development of Stenhouse acts as an ideal model as it combines notions of teaching, learning and assessment and provides a theoretical framework for the development of new modes of learning and assessment linked to a clear differential spectrum of curriculum conceptualisation. It is also important to understand how the Pilot GCSE has come into being as a result of past curriculum development within geography, as this sets the context for the form of the Geography Pilot GCSE and any notion of curriculum, learning and assessment developed therein.

2.1.2 The changing nature of the geography curriculum

Marsh (2004) identifies the constant change which characterizes education,

‘Formal education in schools of the last five decades has been marked by significant and frequent changes in its aims and objectives, its content, teaching strategies, methods of student assessment, provisions, and the levels of funding’ (p.79)

This is no less true of geography education than any other sector in formal education; indeed Walford (2001) demonstrates a long history of development in the subject within a school context from the 18th century onwards. Within a modern context, the first real development in the approach to the subject can be seen in the ‘tensionbetween regional and systematic geography’ (Marsden, 1995, p.28). In the late 1960s, the subject saw a seismic shift in emphasis from a focus on systematic and descriptive studies of particular regions, to one based on quantitative methods, concepts and theoretical models. Rawling (2001) describes

the shift as one from '...emphasis ..on the relatively unchanging features of physical geography, on a mainly static, deterministic view of human societies and on racing through a regionally based coverage of world geography' (p.22) to '...a more conceptual approach ... mak[ing] greater use of quantitative techniques and models, aiming to provide geography with greater rigour and a stronger claim to be part of the scientific community' (p.22). This step change was mainly based on the foundational work of Richard Chorley and Peter Haggett, two academics from Cambridge University who held a number of teacher seminars to develop subject knowledge and thinking.

In 1964, the Schools Council (for Curriculum and Examinations) was created by the Secretary of State for Education and Science to carry out research on curriculum development (Lawton, 1980). Groups of teachers were given the opportunity to develop and experiment with new approaches to the curriculum,

'...we are faced with what is quite a novel situation in English education, a series of curriculum development projects in which teams of teachers are actively experimenting with new curricula to find out whether they are capable of being usefully introduced into the majority of schools.'

(Graves, 1975, p.102)

This research and development included opportunities for geography groups to create new approaches, timely given the recent developments in subject approaches. Three major curriculum projects were developed under the Schools Council initiative each incorporating elements of the 'new geography' in different ways:

- Geography for the Young School Leaver

- Geography 14-18

- Geography 16-19

Geography for the Young School Leaver (also known as the Avery Hill Project) was initially developed to cater for less able students who were required to remain at school until the age of 16 after the raising of the school leaving age. One of the main foci in this project was the creation of innovative resources (Walford, 2001) used to change the curriculum. However, perhaps of most relevance to developing a curriculum which moved away from the traditional regional approach were the criteria for selecting themes. Graves (1975) identifies the criteria as being:

1. each topic should be of interest to the pupils at this point in their lives, i.e. it should involve them, if possible, creatively;
2. each topic should be exploitable in the local situation of each school;
3. each topic should be of more than transitory relevance.

(Graves, 1975, p.126)

These themes, linked to innovative resources show an attempt to produce a curriculum explicitly closer to the experience of students, developed through a more innovative learning approach. The success of this project led to the Avery Hill O-Level, standing the test of time to eventually become a successful GCSE post-1988.

Geography 14-18 (also known as the Bristol Project) was a project which focused on mid and higher ability students, the main focus becoming the development of a new

Ordinary level syllabus. This was eventually negotiated with the Cambridge Local Examinations Syndicate, a major innovation being the type and balance of terminal assessment with only 50% of the original assessment covered by an examination, the other 50% being derived from course work. Even the examination was very different to more traditional competitors with a focus on ‘...questions set to entail the interpretation, evaluation, analysis and synthesis of provided sources which include medium- and large-scale maps, atlases amongst other documentary evidence’ (Graves, 1975, p.120-121).

Whilst the curriculum content of the 14-18 project was perhaps less consciously based on the immediate experience of, and relevance to, students, the major change in assessment regime did allow for a revision in classroom approaches. As with Avery Hill, the Bristol Project survived a number of developments to again become a successful GCSE course post-1988.

The Geography 14-18 project had originally been briefed to consider not only the 14-16 Ordinary level curriculum, but also the 16-19 Advanced-level curriculum.

However, the creation of the Bristol Project O-level had not allowed time for the latter A-level work to be developed. As a consequence, a separate project, Geography 16-19, was created, based at the Institute of Education in London. The 16-19 project not only covered geography, but the wider curriculum. The approach started with an analysis of the needs of students and then created a number of courses which mirrored these needs. Consideration of changing assessment regimes was seen as a core element of this revision. In the case of geography, the 16-19 specification stressed an enquiry led approach with the use of case studies to

exemplify processes. Physical and human topics were treated together to emphasise their inherent interdependence, although 'some criticised it for its relative soft-peddalling of physical geography' Walford (2001, p.178). Assessment, similar to Geography 14-18, moved away from a preponderance of external examinations, with the Pilot, run between 1980 and 1983, utilising a 55% terminal examination and 45% coursework regime (Rawling, 2001). The course proved very popular and was the single most popular specification by the early 1990s.

The characteristics of the Schools Council projects showed a distinct and radical break with geography courses which had been developed previously. The main changes across the projects included:

- an updating of course content to bring it more in to line with university geography, and to emphasise the relevance of the subject to the lives and interests of young people.
- an approach to learning which was more child centred, through the use of relevant material and enquiry, project and field based learning, especially in the cases of Geography for the Young School Leaver and Geography 16-19.
- assessment regimes which moved away from a heavy reliance on traditional terminal examinations. This was achieved in different ways, but both coursework and the use of original examination formats (such as the use of resources in examinations) were central developments.

With these important curriculum developments, there was an obvious attempt to reconsider how geography should be taught and how the role of the student should

be conceptualised in relation to their own learning. Using the framework of Stenhouse as a guide, there appears strong evidence of a shift from an objectives led curriculum to a process led alternative, afforded by a shift in curriculum focus, assessment regimes and learning approaches.

Whilst the changes brought about through the Schools Council projects were positively received by many, there have also been a number of criticisms of the projects. Marsden (1997) argues that the GYSL project, whilst deemed popular and relevant, took the idea of relevance too far, leading to a lack of rigorous physical geography and 'hard' content. He goes on to suggest that the 'good causes' (p.248) approach to the curriculum he believes the Schools Project developments took led to unbalanced content and process. This critique of the loss of subject content level is also stated, perhaps more forcefully, by Scruton et al (1985, in Rawling, 2001, p. ?),

'First difficult and disciplined parts of the subject are removed or downgraded, so that educational achievement can no longer be represented as mastery of a body of knowledge. Second, texts and subjects are chosen not for their intellectual and literary merit, or for their ability to further pupils' intellectual grasp, but for the political attitudes which are conveyed in them, and pupils are taught to consider the acquisition of such attitudes as the true mark of educational success (Scruton et al 1985, pp.8-9)'

Walford (2001) reiterates these views by highlighting the same lack of physical geography content in the 16-19 project, whilst Morgan and Lambert (2005) highlight a greater interest in the development of conceptual thinking within the project which again led to a lesser focus on content. As such, they see the solution to this

problem being the development of a 'people-environment' approach which encouraged the understanding of environmental and social issues.

What is most obviously of concern within these critiques of the curriculum developments of the Schools Council projects is the loss of some of the core traditional content of the subject apparent in their pre-cursors. Such a loss is most acutely seen within the degree of physical geographical content which identifiably decreased through the Schools Council projects.

With the characteristics of the Schools Council projects as given here, they can be seen as the foundation for the nature and approach of the Geography Pilot GCSE 25 years later. Indeed, one point to note is the fact that two of the geographers who were involved in the development of Schools Council Projects, Eleanor Rawling and Paul Weeden, were later to be involved in the initial planning and implementation of the Geography Pilot GCSE, Eleanor Rawling in her capacity as subject officer at the Qualification and Curriculum Authority, and Paul Weeden as an expert on assessment in geography.

The Schools Council was finally disbanded in the early 1980s, a casualty of a new political approach advocated by the Thatcher Government. This ultimately led to the development of the National Curriculum, managed firstly by the School Curriculum and Assessment Authority (SCAA) and then QCA (Qualification and Curriculum Authority). This led to the centralisation of curriculum development under government control, as the Conservatives moved from what they saw as a relativistic and ideological curriculum to one based on 'real' knowledge (Ball, 2008). During the Conservative governments of the 1980s and 1990s, the New Right

philosophy of Thatcherism had an impact on geography as with all subjects as central management of the curriculum led to distinct political perspectives and policies. These included a view of schools as curriculum deliverers rather than curriculum developers, and subjects as being the process of mastering a body of knowledge, taught through traditional pedagogies. As a consequence, teachers were to be trained as curriculum deliverers, and their performance measured through national testing. In this system, there was little scope for developing alternative visions of curriculum, learning and assessment. However, in the first term of the New Labour Government, there was finally limited scope to reintroduce curriculum change and development, albeit controlled from the centre. At this time Eleanor Rawling was the subject officer at QCA and she was given the opportunity to create an innovative GCSE specification. The Geography Pilot GCSE was the result, created by a group of geographers, including Paul Weeden and Diane Swift, and focusing on geographical concepts, alternative assessment media and a hybrid curriculum which allowed for some vocational content.

2.1.3 The Geography Pilot GCSE Curriculum – an Outline

The Pilot GCSE in Geography was introduced as a new GCSE specification, offered by Oxford, Cambridge, RSA examinations (OCR), in September 2003. This was an additional specification to three already offered by the awarding body, the result of a successful bid which OCR had made to the QCA which had developed the specification in consultation with members of the geography community, including those from academia, and the Geographical Association. The Pilot initially ran in 18

schools, acting as 'Partnership Schools' which played an active role in the development of the curriculum, resourcing, and assessment of the specification. In subsequent years, two additional cohorts of centres were included, resulting in a total of approximately 80 schools taking part in the Pilot by September 2006.

The school within which the current research was undertaken (for a more detailed description see Chapter 3, p.116) was one of the first 18 schools to join the Pilot, and hence, has been involved in its development since September 2003.

2.1.4 A Brief outline of the Pilot GCSE

The Pilot course was designed to develop a new approach to GCSE Geography, with a more limited subject content coverage than present in pre-existing GCSEs, offset by a major development in emphasizing concepts and skills development. Whilst the subject content was less broad than long established specifications, it was made clear that this should lead students to a deeper learning of the more restricted content.

In the 'Core' year, there was the completion of three separate areas of study:

My Place	Extreme Environments	People as Consumers
----------	----------------------	---------------------

This was designated as the 'core' year since these units were compulsory and studied by all students. The units could be taught in any order, but scale allowed them to be used to help students to understand the interdependency between their local area (My Place), regions (Extreme Environments) and the global (People as

Consumers). Such use of scale was believed to act as providing a greater coherence to the course content.

The second year focused on the study of two optional units, taken from a list of nine, allowing time for a deeper development of understanding and research by students, thereby advocating a critical approach to learning. The nine optional units were:

- | | |
|--|----------------------------------|
| 1. Coastal Management | 2. Living with Floods |
| 3. Planning Where we Live | 4. Travel & Tourism Destinations |
| 5. GIS | 6. Geography in the News |
| 7. Investigating Geography Through Fieldwork | |
| 8. Introducing Cultural Geography | |
| 9. Urban Transport – finding sustainable solutions | |

The mix of optional unit foci was developed to allow an opportunity for either more academically orientated work to be undertaken, or for more vocationally centred work to be completed, resulting in a form of 'hybrid' course applicable to all abilities.

Another new departure in the specification was the use of 'organising concepts' which underpinned the whole course. They were:

- uneven development
- interdependence
- futures
- sustainability

- globalisation

and were intended to influence learning throughout the course, as a medium through which students could come to critically understand and appreciate the concepts. It was intended that learning would make explicit and frequent links to these concepts so that students developed awareness of the organising principles of the subject.

The assessment regime was diverse, with a great deal of authentic assessment which was fully embedded within the course and which could be completed through a number of different media, for example oral and group assessments. This again was an important departure from more traditional assessment regimes, allowing the embedding of assessment into learning itself (Eisner, 1993), and developing a number of important elements to the process of both assessment and learning:

- assessment of life related understanding in a 'real world' context
- wide range of classroom techniques used but an emphasis on those which are more open ended
- an explicit desire to fully integrate learning and assessment

(taken from Stimpson, 1996)

The inheritance from the School Council projects is clear, with elements of content revision to ensure relevance, alternative assessment regimes and a focus on student centred learning all apparent.

2.1.5 Initial evaluations of the Pilot GCSE Curriculum

A number of evaluations of the Pilot were completed, beginning in 2003, each of which added to a developing understanding of the overall successes and issues of the qualification. The course content of the Pilot was seen as an extremely positive element of the specification. QCA (2006) found that 91.7% of students and 100% of teachers were positive or very positive about the overall content of the course. In contrast, early survey work (RBA Research Ltd, 2003) showed that the teachers involved saw pre-existing GCSEs as content heavy leading to limited learning and teaching approaches. The Pilot content instead allowed for a wider range of learning approaches, and also gave the opportunity for deep learning, leading to better understanding of the subject. There was also a deeply held feeling amongst both teachers and students that the course was more relevant, conveying better what geography is and also allowed for more, varied, and genuine links beyond the classroom when compared to pre-existing specifications.

There were some limited concerns at an early stage in the course. There was mention that the course was becoming too similar to Citizenship in some places, and there was also some concern over 'My Place', as this was the unit which was most different in content and approach, and hence in curricular and pedagogic terms, from pre-existing courses. These concerns were mainly centred on the extent to which the local area was interesting, and the reliance on research based work which the students might not be sufficiently able to cope with.

The students perspective on the course content (RBA Research Ltd, 2003) showed a great deal of enjoyment of the increased focus on genuine and critical fieldwork, and extreme environments proved very popular (Biddulph & Naish,2004) with the diverse approaches used in learning and assessment being particularly important here. There was also a perceived greater choice in the medium of completing and presenting work (OCR, 2004) which made it much more enjoyable than pre-existing GCSEs. In the vast majority of cases, students said that they preferred their GCSE work to that which they had completed at Key Stage 3 (Biddulph & Naish,2004). Finally, there was a greater degree of linking between school based geography and HE (GEES, 2006) as academics became involved in particular curricular innovations.

As a consequence, the course content of the Pilot GCSE was seen in very positive terms, with high rates of approval, a much greater ability to approach the course in a variety of ways, and the opportunity to help students gain a deep and critical appreciation of the subject.

The large number of evaluations carried out on the Pilot GCSE have allowed for a rich source of teacher views to be captured. Early survey work (RBA Research Ltd, 2003) showed that the teachers originally involved in the Pilot GCSE considered it a radical departure from pre-existing GCSEs, seeing the course as both fresh and exciting, and as a proactive response to the subject's generally low profile within the wider educational community. It was perceived as having greater relevance, and focused on depth as opposed to breadth.

There was a clear feeling amongst teachers of several positive impacts (Biddulph & Naish,2004). The new, and more critical approaches were rapidly filtered into KS3

and A-level, with more adventurous use of learning styles and more flexible lesson planning, together with more open ended, research based work as a core element of learning. The curriculum was seen as a whole, rather than disaggregated units, leading to more detailed and conscious considerations of medium and long term planning.

Finally, teachers saw the course as being more relevant (100% of respondents) (QCA, 2006), and many felt it was a major stimulus for their own careers. There was also a 100% return of departments (Biddulph & Naish, 2004) feeling that their involvement had been a positive experience.

76% of teachers felt that the course was modern and up-to-date, and there were a significant number of findings regarding the relevance of the course. 75% believed it was more relevant than other GCSE courses they were following, with 77% feeling that it would be at least fairly, if not very useful to future careers, with 43% saying it would be essential. Even though the respondents were only in Year 10, 27% were already thinking of Geography related options at post-16. Indeed, the overall reaction to the survey was positive, and demonstrated that the geography advocated by the Pilot was seen in a positive light by students.

There is little doubt that the various surveys undertaken on the Pilot demonstrate a very successful curriculum initiative. The feedback from both teachers and students was predominantly enthusiastic and positive, following on from an innovative approach to both learning and teaching and assessment, the foundations of which were based on a well considered and successful content framework.

2.1.6 Conclusion

The Pilot can be seen as a direct descendant of the earlier Schools Council projects.

This descentance can lay it open to some of the same criticisms. Changes to the wider Geography curriculum at the start of the new millennium led to much of the same soul-searching and criticism of the geography curriculum as had occurred in the early 1980s. Much of this recent criticism has come from Standish (2004, 2007) who sees the inclusion of values education and informal geographies based on the experience of children as a weakness and ‘dumbing down’ of the geography curriculum. He argues instead for a curriculum which centres on theories and knowledge, quoting Arnold (1907-21) ‘a disinterested endeavour to learn and propagate the best that is known and thought in the world’ (p.91). The Pilot GCSE did not cover the whole breadth of the subject, and in this sense might be critiqued in the same way as the Schools Council projects out of which it grew. However, the Pilot sacrificed a breadth of content for a depth of understanding which itself was linked throughout the course. As Wood (2005, p.88) writes,

‘.....whereas many of the older GCSE syllabuses tended to offer ‘bite-sized’ chunks of the whole subject, often with no unifying philosophy, the Pilot GCSE has a common set of threads running through it. The five underlying concepts are one such thread...’

Aims are at the centre of these differing perspectives of the nature of the geography curriculum. The Pilot can be seen as an attempt to help students gain a conceptual and holistic understanding of the subject, with physical geography more explicitly embedded across both years of study (although admittedly, options allowed a less

developed exposure in their second year of study). However, it is also true that it does not cover the volume of content, including lists of theories, as advocated by Standish (2004, 2007). However, this might be that one curriculum approach sees the aim of geography education as being the creation and development of a student who has a large geographical knowledge, whilst the other (the Pilot) sees the aim as being the development of a student as a knowledgeable geographer.

With a very different view of curriculum, learning and assessment, it offered an ideal opportunity to consider changes in approaches to learning. The foundations on which the development of a learning framework was based are discussed in the next section.

2.2 Learning

2.2.1 Introduction – Research into learning

Learning research is an extremely complex field with different perspectives from philosophy (Cigman and Davis, 2009), psychology (Wood, 1988), education (Jarvis, 2006) and cognitive science (Sawyer, 2006) all with views of learning as well as methodologies of analysis. Given the approach of Stenhouse (1975) towards curriculum, which differentiates between behaviourist and constructivist views of learning, a model of learning was sought which puts the student at the centre of the process. At the time at which the current research was developed, the concept of personalised learning was being introduced to schools. Personalised learning seems to offer a framework for developing a pedagogy which focuses on the child, with,

'...opportunities to develop a wide repertoire of teaching strategies, including information and communication technology (ICT).'

(West-Burnham, 2005, p.15)

Hargreaves (2004a, p.10) also argues that personalised learning allows for the development of general principles within a specific context, highlighting that,

'We cannot specify – and should not seek – a formal definition of personalization before we embark on the journeys of these innovation networks. We shall discover what personalization is during the journey itself.'

West-Burnham (2005, p.19) goes on to state that,

'Personalization of learning offers a powerful opportunity to design education systems around a totally different conceptual framework that is based on scientific and social research rather than pseudo-science and social prejudice.'

It is therefore the potential of personalised learning to act as a framework for learning that is considered here.

When New Labour came to power in 1997 it did so, in part, with a mandate to change and 'improve' education. As Tony Blair stated in a speech given at Ruskin College, Oxford on 16th December, 1996:

'An Age of Achievement is within our grasp – but it depends on an Ethic of Education. That is why in my party conference speech I said that my three priorities for government would be education, education, education.'

Having laid the cornerstone of New Labour education policy as focusing on achievement, he next outlined some of the changes he foresaw as central to achieving this aim:

'We will expect education – and other public services – to be held accountable for their performance; we will urge teachers to work in partnership with parents, business and the community; and we will balance parents' rights with a recognition of their responsibilities.'

This led to the centrality of a standards agenda within New Labour education policy. Such a focus appears to be underpinned by two basic assumptions concerning the nature of not only education policy, but wider public services policy also. The first is the perceived economic imperative of globalisation. Ball (2008) states that

'Education is now seen as a crucial factor in ensuring economic productivity and competitiveness in the context of 'informational capitalism'.'

(Ball, 2008, p.1)

As such, this highlights the perceived need to see education as an extension of the economy, providing well trained individuals for a place in the employment market.

The second assumption which has been apparent in New Labour policies is a belief that neither the traditional left wing policies of the Labour Party of the 1960s and 1970s, exemplified by state intervention and public ownership, nor the free market approach of the Conservatives under Margaret Thatcher, have brought the wished for outcomes of an efficient, economically vibrant society at ease with itself. With the rise of a global economy, economic competition based on international comparators of educational attainment, together with the prevailing global political

view of education as economic subset, has also led to a sea-change in educational policy in England as with most other countries around the world.

With this global backdrop, New Labour have focused on the level of attainment that students achieve, not only in national testing, but also in their performance in the PISA (Programme for International Student Assessment) league tables. This has resulted in a continuous push to 'drive up standards' so that the international economic community, as well as voters at home, can be shown continuous improvement in the education sector.

The attempt to chart a new course in social provision relied on the philosophy of 'social capitalism' or the Third Way (Giddens, 1998). No simple definition exists of this political philosophy, but it is generally characterised by principles of equality of opportunity, community, accountability, and rights and responsibilities of the individual. At the same time it espouses the need for entrepreneurs, deregulation, engagement with the global market, and an acceptance that public services should no longer necessarily have a monopoly in social provision.

In 2003, Tony Blair, perhaps influenced by Third Way ideals of community, rights and responsibilities, unveiled a new vision of education for the schools of England. This was to be the new philosophy to restore confidence in the standards agenda, and to unveil a renewed 'New Labour' philosophy for education:

'In secondary education, future reform must have as a core objective a flexible curriculum providing a distinct and personal offer to every child'

(Tony Blair, Sept 2003, quoted in Johnson, 2004a)

This located education as a process which should be centred on the aspirations and choices of the individual child within the wider social field. Whilst Blair was the initial public face of this new approach to education, his description was underpinned by the work of Charles Leadbetter, a policy expert at policy think tank Demos.

2.2.2 The foundations of personalisation

Leadbetter (2004) identifies two different ways in which the public good could be served by social provision. The first centres on the notion that the state should provide ever more effective and efficient services, success being tracked through ever more improbable attainment targets of various types; in this way, efforts of professionals are fully focused on delivering government ideals. The second relies on individuals making decisions at a personal level, producing an improvement in the public good through incremental developments. The first is seen as a 'top-down' model, the second a 'bottom-up' model. As a consequence, Leadbetter argues

'These two approaches to innovation – more effective top-down and more pervasive and powerful bottom-up – are not necessarily at odds. They could be complementary. Indeed the state's capacity to deliver better and better services, with limited resources, will depend on it encouraging people to become more adept at self-assessing and self-managing their health, education, welfare, safety and taxes.'

(Leadbetter, 2004, p.17)

This is a crucial element of Leadbetter's view of personalisation, as it highlights the philosophy of the *connected* or *interested* individual who has a conscious desire to play an active role in the shaping of the services provided by the state. Active

participation by individuals in a hybrid social-market model is argued to be as simple a system as privatisation, and by implication it is also considered to be better;

'Privatisation was a simple idea: putting public assets into private ownership would create more powerful incentives for managers to deliver greater efficiency and innovation. Personalisation is just as simple: by putting users at the heart of services, enabling them to become participants in the design and delivery, services will be more effective by mobilising millions of people as co-producers of the public goods they value.'

(Leadbetter, 2004, p.19)

The identification of users as co-producers is central to Leadbetter's philosophy of personalisation; it is the principle that the participants in public services should also have a clear role in forming and delivering them. This is a central concept in the way Leadbetter (2005) characterises the potential of personalisation in education, seeing the students and parents themselves as the central resource in the process.

Teachers meanwhile are assigned the role of professional mentor, acting to help and 'steer' the students and parents through their use of the service. Interestingly, he ensures that both students and parents should be seen neither as consumers (a free-market attribute), nor recipients (an attribute of centrally provided public services) but as co-producers of the educative system. Hence:

'The aim is to turn passive recipients into active participants, consumers into contributors. Children and families should be seen as part of the larger productive system that creates learning.'

(Leadbetter, 2005, p.5)

Leadbetter's belief is in the development of public services systems which are no longer identified by their ownership (i.e. public or private) but in their relationship with those who use them, themselves being re-branded as *co-producers*.

Within the work of Leadbetter, there is a strong focus on learning, but couched in the notion of engaging families, and especially parents, in the learning of children. Hence, he identifies 'three causes of personal under-investment in education' (Leadbetter, 2005, p.6), being those families who believe that education is not 'for them', those who believe it has little relevance, and finally those children who drop out of the system early. Hence the role of personalised learning is 'to raise the rate of personal investment in education' (p.6). As such, there is also a message that this is not an innovation developed for the consumption of the middle classes, but is meant to bring equity of opportunity to those from marginal and disadvantaged backgrounds. As a consequence, Leadbetter defines personalised learning as involving not only organisational change, but also a change in the notion of learning, with a clear link to constructivist theories:

'Learning is not just the successful transfer of knowledge and skills. Learning comes through interaction in which the learner discovers for themselves, reflects on what they have learned and how. Effective learning has to be co-created between learner and teacher, in which both invest effort and imagination. As a result, the learner becomes better able to self-manage their own learning and motivated to invest in it.'

(Leadbetter, 2005, p.8)

With this as the central tenet of Leadbetter's view of personalisation, there then follows the need for systemic change in schools to meet the challenge of making this

transformation reality. This leads to general statements concerning choice, management, organisation and technology, all of which are called into action to help make such a vision reality. However, at the core of this philosophy is the continued pivot of the child as co-producer of their educational experience.

Campbell et al (2007) believe Leadbetter's characterisation of personalisation occurs at five increasingly deep levels of participant engagement:

1. providing more customer friendly services;
2. giving people more say in navigating their way through services;
3. giving users more say over how money is spent;
4. users becoming co-designers and co-producers of services;
5. self-organisation by individuals working with the support and advisory systems provided by professionals.

(Campbell et al, 2007, p.135)

They argue that the first three levels can be defined as 'shallow personalisation' as they only require the state to work more efficiently, with little need for systemic change, whilst the 'deeper' levels of personalisation (4 and 5) actually require substantial changes in the way that public services operate, particularly in the way that professionals become advisors and co-designers, rather than experts.

In the case of education as opposed to other forms of social provision, Campbell et al (2007) highlight a central tension in Leadbetter's philosophy, as it is difficult for students to co-create learning when the state dictates the content and timing of the curriculum. This may begin to change somewhat with the introduction of a skills and

concepts based Key Stage 3, but essentially with a state dictated curriculum, choice and co-creation becomes restricted to the choice of courses to follow, but not their content. They also highlight that the innovation as presented relies on the self-motivation of students to become co-producers of their education. As stated above, they are seen as interested individuals who are keen to make the most of their position in the personalised system. Here Campbell et al (2007) highlight the fact that different classes and cultures in English society have differing levels of educational motivation, a fact highlighted by Leadbetter himself. Here, a difference of opinion occurs, as Leadbetter sees personalisation as the antidote to inequity of opportunity. Campbell et al, however, see it as an ambiguity which may actually lead to increasing educational disadvantage.

Leadbetter does recognise a potential motivational differential between groups and therefore argues that resourcing should be skewed to those who are disadvantaged in the current system. This is supported by Milliband (2003) who believed that targeted funding, together with a package of reforms could bring great advances in equality of outcome within the educational system. However, as Campbell et al state, such interventions have had a long and ignoble history, and it remains to be seen whether personalisation will have the major desired impact, especially as it may be serving a number of political as well as educational purposes.

Since the work of Leadbetter, some researchers have discerned a developing tension between his philosophical account, and the government's developing policy agenda. Cutler et al (2007) point to the government identifying personalisation as 'a

mechanism for achieving an objective defined by government, a 'personalised service' is a means 'to drive up standards'' (p.852). Further they state:

'Quantitative educational targets, obligatory testing of pupils, and publication of test results have been and remain a staple feature of Labour education policy. Such policies are contradictory with 'personal' selection of educational objectives.'

(Cutler et al, 2007, p.853)

Hence, the features of personalisation which are accepted in political terms, are only those perceived as a benefit in relation to standards. This then calls into question the real 'depth' of personalisation, given the standards imperative.

Drawing on the work of Scottish philosopher John Macmurray, Fielding (2006) considers how the tensions between personalisation and the standards agenda might be played out in schools. Macmurray (1933) argues that there are two forms of human relationship; those that are functional (or instrumental), allowing us to get things done, and those that are 'personal' which are based around us becoming ourselves through relations with others. Further Macmurray sees these two forms of relationship as interdependent. Fielding uses this basic premise to identify differing forms of school, as shown in Table 2.2.

Schools as Impersonal Organisations	Schools as Affective Communities	Schools as High Performance Learning Organisations	Schools as Person-Centred Learning Communities
<i>The Functional Marginalises the Personal</i>	<i>The Personal Marginalises the Functional</i>	<i>The Personal is Used for the Sake of the Functional</i>	<i>The Functional is for the Sake of / Expressive of the Personal</i>
Mechanistic Organisation	Affective Community	Learning Organisation	Learning Community
Community is Unimportant / Destructive of Organisational Purposes	Community has few Organisational Consequences or Requirements	Community is a Useful Tool to Achieve Organisational Purposes	Organisation Exists to Promote Community
Efficient	Restorative	Effective	Morally and Instrumentally Successful

Table 2.2 Organisational and communal orientation of schools (Fielding, 2006, p.354)

Those schools which identify themselves as organisations which are focused on high performance use personal relationships both between students, and especially between students and teachers to ensure that functional aspects of formal relationships become paramount. This might be played out by developing positive relationships which are then the basis for discussion of grades and how to achieve them. As a consequence, the school's community is reflective of the organisation's purpose, making it an effective school in terms of gaining the maximum performance in quantitative terms from the students. However, in sharp contrast, those schools which are person-centred see the importance of personal relationships, and these dominate over the functional. As a consequence,

quantitative targets and grades play a minor role when contrasted with the development of a positive community within the school.

Fielding argues that these differing school orientations lead to different conceptualisations of achievement, with the High Performance Learning Organisation seeing achievement as grades outcome, whilst the Person-Centred Learning Community sees it as a wider, holistic process. As a consequence of these different philosophies, Fielding argues that the vehicle of personalisation could lead to a form of totalitarianism; used solely to ensure ever higher levels of attainment, personalisation could become a teacher led process used to manipulate better and better performance from students. This complex interplay of relationships and educational aims also reinforces the critiques of those such as Cutler et al (2007) and Campbell et al (2007) that the true nature of personalisation is difficult to discern due to confused philosophical foundations.

The work of Fielding strongly suggests that the model of personalisation which might be adopted by a school relates fundamentally to the ethos of the organisation. This then suggests that personalisation as a practical set of approaches is perhaps not well defined. The general philosophical approach might be relatively clear, if contested by some, but the nature of a practical framework cannot be monolithic in its character. This is made explicit by Hargreaves (2004), who has completed extensive preparatory work concerning personalised learning for the Specialist Schools and Academies Trust. He claims that David Milliband, as early as 2003 had:

'not laid down a detailed specification or a national strategy... [but]... leaves the way open for the (teaching) profession to take the lead – to define personalised learning in a way that can benefit young people'

(Hargreaves, 2004a, p.1)

This is suggestive of a social constructivist approach (Carter and Franey, 2004) where the general scope and philosophy is laid down by the centre, but the detail of how it is translated at a local, or even school, level is left to the professionals on the ground,

'We propose that the adoption of social constructivist processes will be an essential level for schools to re-conceptualise leadership and learning in the context of their response to a localised interpretation of a national reform agenda.'

(Carter and Franey, 2004, p.4)

A local, constructivist approach to personalisation appears powerful, as it allows general policy to become relevant and contextualised within the local situation. Sebba et al (2007) completing an evaluation of the development of personalised learning in all sectors, demonstrate this variability. The introduction of personalised learning is seen as being positive in many ways with schools interpreting the overall framework provided by government to suit and develop those areas they believe need to be attended to. However, some school leaders responding to a questionnaire survey administered by Sebba et al (2007) found this difficult as:

'Personalised learning does not seem to be clearly defined and seems to mean different things at different times. It would be good to have a clear definition to work from. (Questionnaire, primary)'

(Sebba et al, 2007, p.18)

Others felt that the whole agenda was a re-branding exercise which merely highlighted the good practice which was already taking place in schools:

'I also feel that we have been working on several initiatives that I have commented on in this questionnaire for a while but we did not label them as personalised learning before now. (Questionnaire, secondary)'

(Sebba et al, 2007, p.19)

However, even given this reservation, many leaders included in Sebba's research saw the introduction of personalization as a supportive agenda to help them develop more positive learning environments within their schools and local communities.

Johnson (2004b), reflecting the concern that personalisation may only be a re-branding of ideas, or a collection of the latest new ideas packaged together for schools' consumption, highlights the dichotomy that personalisation could be taken either as 'a box for a number of items of good practice which are already found in schools but which need to be generalised across the system' (p.17), or alternatively as a 'move towards a much more radical revision of school organisation and pedagogy' (p.17).

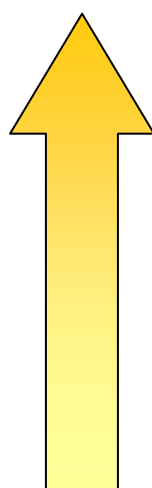
2.2.3 Defining the practice of personalised learning

The practical form of personalised learning, as stated above, is open to debate, as several politicians, government bodies, and academics have attempted to outline what they see as being the essential features involved.

Milliband (2004)	Hargreaves (2004a,b)	Gilbert (2006)
<ul style="list-style-type: none"> • Assessment for Learning • a wide range of teaching techniques to promote a broad range of learning strategies (inc. ICT) • curriculum choice, particularly from the age of 14 • the organisation of the school • links to services beyond the classroom, involving the wider community and families, 	<ul style="list-style-type: none"> • Assessment for learning • Learning to learn • The use of new technologies • Development of curriculum models • Student voice • Coaching and mentoring • Advice and guidance • School design and organisation • Workforce development 	<ul style="list-style-type: none"> • assessment that promotes progress • Summative assessment and the National Curriculum • High quality teaching • Pupils taking ownership of their learning • Designing schools for personalised learning (inc. the planning of more extensive ICT) • Skills development of professionals for personalised learning • Engaging parents and carers in their children's education

Table 2.3 Definitions of the practical school level basis for personalised learning.

Table 2.3 summarises the areas which have been suggested by three of the central figures in the development and debate of personalised learning. There are recurrent themes across the statements, which occur at different scales (Figure 2.3).



Beyond the school – stronger links with outside agencies, local communities and, most importantly, with parents and carers

Whole school – redesigning schools, changing the organisation of the workforce, giving greater curriculum choice, development of professionals to meet new challenges, including the use of coaching and mentoring, advice and guidance, student voice, and the integration of ICT.

Classroom & personal level – assessment for learning, widening teaching and learning repertoires, learning to learn, and greater student autonomy in learning

Figure 2.3 Common themes in definitions of personalised learning

This demonstrates that the concept of personalised learning is focused not merely on school organization, but on ensuring that such structures allow for a more efficient, dynamic and motivating environment for teaching and learning within the classroom.

For the purpose of the present study, it is at the level of classroom and personal change that most focus will be given, together with some of the elements of school level organisation.

Elements of personalised learning suggest the need to make the learning environment more dynamic and as a result, structures and relationships will need to develop and evolve to support this aim. The elements of personalisation as identified in Figure 2.1 which would have a *direct* impact on the dynamics of the classroom are:

- assessment for learning
- more heterogeneous approaches to learning
- greater student autonomy in learning
- inclusion of learning to learn

Another element which will have a potential direct impact on learning but which is at least in part controlled by policy external to the classroom is:

- greater integration of ICT

The inclusion of these five principles is perhaps unsurprising, as they are all current research areas which have a great deal of exposure. Together they appear to offer the recipe for a dynamic learning experience. However, of interest is the fact that

temporaneously, they all pre-date the introduction of personalised learning as a concept.

2.2.4 The classroom level of personalisation

Leadbetter (2005) has signalled a clear need to develop learning environments which are based on constructivist approaches to learning. This relates well to Stenhouse's (1975) view of education as process and education as research, which identify learning activities as requiring active learning (education as process) and the inclusion of mechanisms by which students can come to consciously see themselves as active learners (education as research). This strongly suggests that any learning environment needs therefore to foster active learning. In addition to this, Gilbert (2006) suggests the need for more autonomous learners as students are seen as taking control of their own learning. Whilst Stenhouse does not make independent learning explicit it is certainly in keeping with the notion of an active learner who is consciously aware of their own abilities as a learner. Personalised learning can therefore be taken as developing heterogeneous learning through active learning approaches, and through the development of autonomous learners.

Active Learning

Scardamalia and Bereiter (2006) claim that the 20th Century has seen a prolonged attempted shift from didactic, knowledge transfer approaches to learning, such as Stenhouse's (1975) objectives led education, to approaches which rely on active learning. They define active learning as being a process where activities are student

driven through their own interest, resulting in the generation of knowledge and competences which come through the students' own interaction with the learning focus. This suggests that active learning is any process whereby students develop understanding through their own investigation, rather than acting as passive recipients of information. This is further emphasised by Stein (2005) who argues that active learning is directly linked to active participation of motor areas in memory networks inside the brain. He therefore states that,

'Children made to sit and listen passively to teacher without active involvement in teaching themselves have consistently been shown to lag behind children who are encouraged to actively find out things for themselves.'

(Stein, 2005, p.37)

Geography has a rich history of developing and utilizing a wide range of learning approaches which reflect many of the principles of active learning. This may well be the direct consequence of a subject which attempts to help students understand the complexity of the world around them. Two obvious examples of this are the use of enquiry based learning, and fieldwork.

Enquiry based learning within geography is an approach to learning which has become increasingly popular since its adoption as part of the 16-19 Geography Project. Enquiry based learning can take many forms, but in essence it is an approach which challenges students to ask questions about issues and problems, which then act as a focus for learning. Roberts (2006) highlights that enquiry based learning can be defined in more than one way. It can be seen as a discrete

piece of work which progresses through a number of phases, or can be seen more broadly as an approach to learning in general.

Enquiry based learning as a discrete exercise has often been linked to completion of fieldwork (see Figure 2.4), with the generation of questions focusing on an issue, followed by subsequent investigation and the drawing of conclusions. A crucial element of this approach, however, is the evaluative element. This allows for a metacognitive consideration of the learning process which has been undertaken, thereby helping students to understand how they can improve their learning, as well as potentially posing more geographical questions for further consideration.

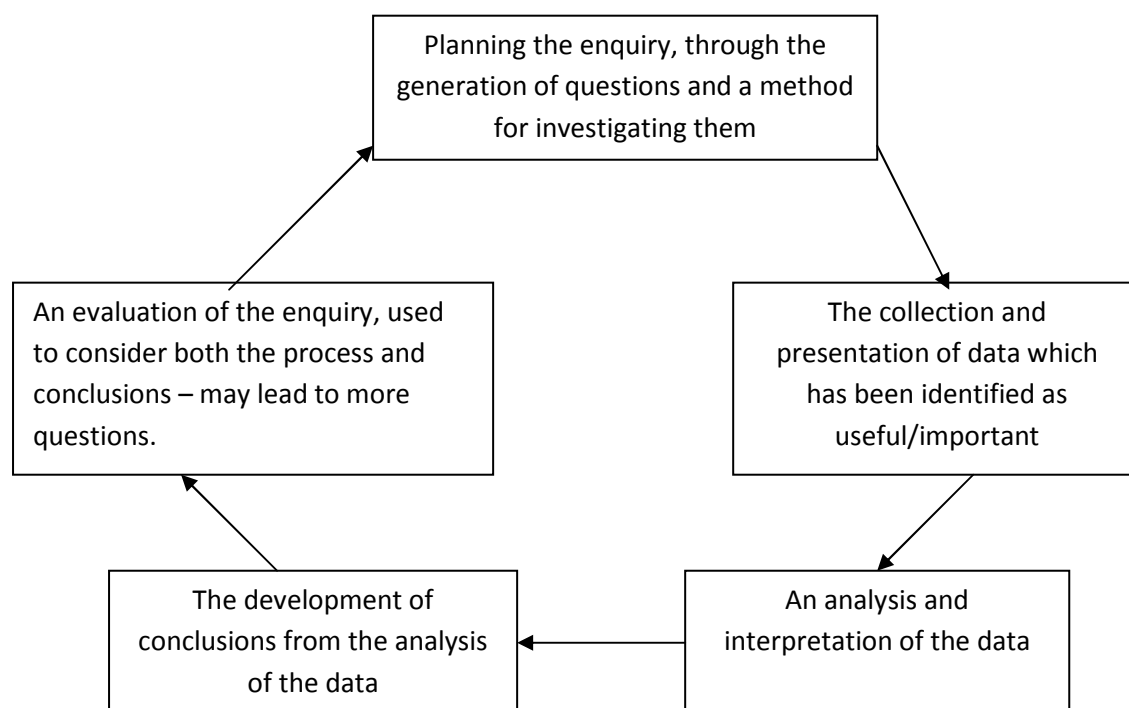


Figure 2.4 A basic enquiry based learning Cycle for a discrete investigation (based on Roberts, 2006, p.93)

The second approach to enquiry based learning is one which is more pervasive within the learning of students, and which does not take the form of single identifiable pieces of work. Here, it is seen as more of a pedagogy which infuses the work of students. Roberts (2003) discusses a number of approaches which might only focus on one element of what is traditionally seen as an 'enquiry exercise' such as describing a geographical feature or pattern, asking questions, or considering geographical futures. In each case, it is the centrality of social constructivism, and the resultant focus on students developing their own thoughts and ideas within a framework provided by the teacher, which is the mark of enquiry.

Another active approach to learning which is central to geographical education is the inclusion of fieldwork. This form of learning has a long and distinguished history within the subject (Walford, 2001), and has taken on a number of forms. More recent approaches have tended to emphasise the quantitative aspect of work beyond the classroom, focusing on students collecting numeric data for statistical and graphic use once back in the classroom. However, this is only one potential way of developing fieldwork competence. Job (1996) highlights a number of ways in which fieldwork can be used in geography (see Figure 2.5), from teacher dominated, quantitative approaches, such as the often used land use survey of GCSE folklore, through to those approaches which are student led, and include a major element of qualitative, and affective foci in learning.

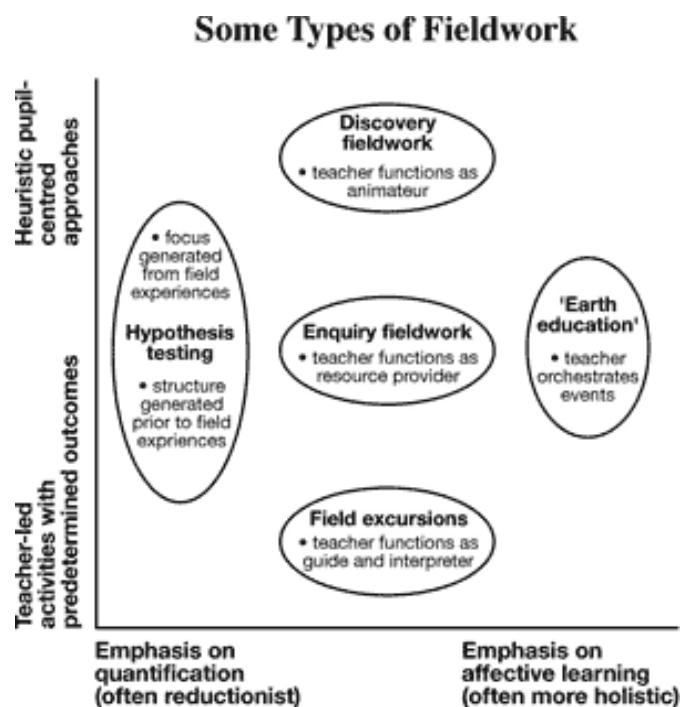


Figure 2.5 Some types of fieldwork. Source: Job, D.A. (1996) Environmental Education in Kent, A. et al. Geography in Education, p. 34.

Perhaps the main rationale for much of the fieldwork undertaken by students is its utility in 'applying ideas generated in the classroom' (Foskett, 1997, p.189).

Fieldwork not only allows for the contextualisation of subject understanding, but is essential for the development of skills. Foskett (1997) identifies three main skills sets which he believes are developed by the inclusion of fieldwork:

- subject specific skills,
- wider generic skills,
- intellectual skills.

As such, fieldwork can, and indeed should, play a central role in the developing geographical education of children. It provides not only an extension and securing of subject skills, such as field sketching, the reading of maps, or

sampling methods, but also develops generic skills including the use of group work, and writing skills. Finally, as Foskett suggests, it extends the opportunity to develop intellectual skills such as problem solving. This then enables the development of a rich and varied approach to learning.

These two exemplars give a clear view of geography teaching as an active learning process where students have a central role to play in developing their own learning. This then allows for students to begin to personalise their learning, especially through choice given in the focus of their work.

Developing autonomous learners

An important element of many of the learning approaches considered in the last section is their utility in developing autonomy in learners. Enquiry based learning, for example, through helping students understand both how to pose useful questions and consider how to answer them critically, leads to the notion of the increasingly autonomous learner. Little (1991) sees autonomous learning as being a 'capacity – for detachment, critical reflection, decision making and independent action' (p.4), and Dickinson (1995) believes that as this capacity develops, students will develop a greater motivation to learn, eventually leading to a symbiotic relationship between learning and living which will allow such traits to become part of day to day life (Dickinson, 1987).

Ecclestone (2002) has developed the notion of a form of 'hierarchy' in autonomous learning (Table 2.4), moving from procedural notions of autonomy to critical autonomy. What is important here is the changing focus of this transition, from the use of self-evaluation of teacher determined work, with the students apparently having some power over the rate and hence, time management of their work, to critical autonomy, where the students are at the hub of their own learning, including their role as curriculum developers. Ecclestone's view of autonomy is reflected in the work of Betts (2004), who has worked with 'gifted and talented' students in the USA, and through this has identified levels of autonomy, what he identifies as 'levels of differentiation'. Again, there is a thread running through his conceptualisation of autonomy which focuses on the student as an emergent curriculum developer, a specific element of which is the role of the teacher providing choice and thereby freeing the students to develop their own learning, rather than following a predetermined and 'closed' curriculum supplied by those external to the classroom.

Hence, the notion of 'levels of autonomy' can be used as a potential framework for developing student learning through increased autonomy, from a more teacher defined structure and pace, to an environment where the students have a more autonomous focus both cognitively and in terms of their relationship to the teacher and other learners. This transformational process would be in part developed through critical use of assessment for learning to support and develop emerging practice amongst the students. This might be seen as an opportunity to develop the Philosophy for Children concept of 'communities of enquiry' as opposed to a more rigid classroom dynamic. Roberts (2003) demonstrates how some of these more

independent structures can be developed across the whole geographical curriculum through a focus on enquiry based learning, as described above.

Betts (2004)		Ecclestone (2002)	
Three levels of curriculum and instruction – focusing on gifted and talented students		Level of autonomy	Outline characteristics
Level one: Prescribed curriculum and instruction	Basic curriculum which involves basic knowledge and skills. Curriculum is developed via 'state' organisation.	Procedural	Some determination of pace, timing and evaluation of work, with the transmission of pre determined content and outcomes.
Level two: Teacher-differentiated curriculum and instruction	The teacher begins to play a role in forming the curriculum through modifications to the regular format. This heralds choice, and introduces complexity to the classroom.	Personal	Development based on a knowledge of one's own strengths and weaknesses, therefore becoming more student-centred with negotiated outcomes and processes for achieving them.
Level three: Learner differentiated curriculum and instruction	A move from 'consumers' to 'producers' of knowledge, including affective exercises, and a drive for student autonomy.	Critical	Independent, critical thinkers who are able to self-evaluate, and where formative assessment encourages critical reflection thereby questioning personal barriers to understanding

Table 2.4 Synthesis of models of increasing autonomy by Ecclestone (2002) focusing on post-16 education, and Betts (2004) focusing on the development of gifted and talented students in the USA.

Greater integration of ICT

'In the 19th century the teacher was for most students the gatekeeper of knowledge, since learners had little or no independent, ready and inexpensive access to books. Some 150 years later, the teacher is no longer a gatekeeper, for the new technologies have made vast sources and quantities of information accessible to almost anyone, almost anywhere and at almost any time at the touch of a button.'

(Hargreaves, 2005, p.22)

ICT is a major part of the lives of many young people, from the use of games consoles to the use of mobile phones and the internet. As such, it is no surprise that there is an increasing desire to employ these technologies within an educational context. As such, they offer certain advantages in the classroom context (Hargreaves, 2005):

1 – *Engagement and motivation*: Students are generally motivated by the use of new technologies as they find them interesting and 'immediate' in their effect. With support and structuring they allow 'live' information into the classroom, and can be used to develop a more individualized level of resources and information.

2 – *Independence, responsibility and control*: Students can be helped to become increasingly able in accessing information and its subsequent critical use, and as such can be given more responsibility over their own learning. This develops independence and allows students to make greater use of the time available to them. However, the development of ICT skills is essential if this is to develop positively.

3 – *Social skills*: Where computer suites are developed with students in mind, they can offer a layout which allows pairs, or groups, of students to work collaboratively through the use of ICT.

4 – *Participation*: By allowing work to be developed in different packages, there is a greater chance that students are able to produce varied formats of work, and a finished quality which is not too far removed from that which could be developed by a professional publisher. As such, this gives the opportunity for students' work to be publicly recognized and even to act as part of a school website.

An example of the integration of ICT into the work of geography teachers and students is the increasing use of Web 2.0 applications. Blogs have become an increasingly popular medium for learning within the U.K. geography teacher community (Wood, 2009a). They serve a wide number of purposes (Rey, 2006), from posting homework to allowing students from distant schools to peer assess each others work. One school in the Midlands makes daily use of a departmental blog not only to post homework but to offer links to additional resources and to link to other Web 2.0 applications to encourage peer and self-assessment. These uses greatly augment the introduction of virtual learning environments which are now present in most schools. As Duffy and Bruns (2006, p.1) state,

'[blogs]...enable individuals to interact within the educational domain in new ecologies of learning.'

The use of blogs becomes integrated into classroom activities, but actually does more than that. Rudd et al. (2006) challenge the assumption that the most efficient and positive learning experience for students comes from the sole organisation of that learning within classroom environments. They envisage the use of technology as a medium for extending the learning environment into a more collaborative and networked process, a process for which there is some initial evidence in U.K. schools (Wood, 2009a). The use of blogs is also allied to a greater use of the internet in general to support independent learning.

Another recent development in the use of ICT within geography education has been the rapid adoption of Geographic Information Systems (GIS) in many schools. The National Research Council of the U.S.A. (2006) see the development of GIS within school level education as a vehicle for promoting student thinking, specifically spatial thinking and the development of spatial literacy. Malone et al (2002) see GIS as a positive medium through which enquiry based learning can occur, as they state in the introduction to their book,

...you will use GIS as a tool kit to explore many issues and, as you use GIS, you will engage in the geographic inquiry process.'

(Malone et al, 2002, p.xxiii)

GIS becomes a useful tool in dealing with large data sets, using ICT as a way of making sense of information which otherwise could not be utilised in learning and developing understanding.

These are just two examples of the development of ICT use in the classroom. Tools can be used to gain information from a wide spectrum of sources (internet), often guided, through technologies such as blogs, which also offer a greater level of interactivity. They can also be used to rationalise and query information, such as in the use of GIS, to speed up and augment the capacity for learning within and beyond the classroom.

Learning to learn

Over the past decade there has been a rise of interest in the notion of dynamic interpretations of intelligence and learning. This has included principles such as Multiple Intelligences (Gardner, 1983) and the allied concept of learning styles (for example Kolb, 1984), indeed Hall and Moseley (2005) review 13 such models of learning to assess their potential validity in application to pedagogy. As the development of the notion of meta-

cognitive frameworks for learning (where students develop a notion of their learning styles, and then go on to reflect on themselves as learners) has developed alongside this explosion of interest in learning styles, there has been an increasingly popular trend towards the development of 'Learning to Learn' frameworks. In addition, courses where such ideas are discussed and developed with students have grown in an attempt to make young people more 'efficient', and critically reflective learners. Such courses and foci rely on the student identifying strengths and weaknesses in their learning and then using these to self-support improvement and development in their own learning.

There is a ready appeal for using learning styles as a focus for learning as they can help produce common-sense explanations for the differences teachers encounter in the classroom. However, there is increasing discussion over the validity of their use, and the ways in which such principles are embedded within classrooms. For example, reflecting on a career in understanding the dynamics of classrooms, Hattie (2009) argues that the effect size of following a learning styles/individualization approach is only 0.14 against 1.04 for the effect of instructional quality (Here, an effect size of 0 equates to a lack of an effect due to implementation, whilst a value of 1 equates to an increase of one standard deviation of the sample). Evidence such as this begins to call into question some of the claims made concerning learning styles approaches. A further issue in relation to learning to learn programmes and approaches is the fact that there are a large number of contrasting theories concerning learning, and Burton (2007) goes as far as to suggest that the success of learning styles as a medium for learning, especially VAK (Visual, Auditory, Kinaesthetic), has been the result to a large extent of its media based popularity.

To make the use of learning styles even more complex, some theories tend to portray a 'fixed trait' model in relation to intelligence where engagement with external factors, innate tendencies and lived experience play a major role in both preferred approaches and potential outcomes. Other theories focus on the 'flexible' nature of learning, leading to the notion that it is internally determined and can therefore be built on and developed (reviewed and classified by Hall and Moseley, 2005). This suggests that the theories are not foundational in an epistemic sense, as there is little common ground between them.

The above discussion suggests the utility of learning styles within the classroom is empirically unproven at present (Hall and Moseley, 2005), but it can be claimed that by concentrating on some of the positive elements of the approach, such as meta-cognition (Burton, 2007; Shayer and Adey, 2002), it is possible to increase motivation and develop autonomy in students.

Hall and Moseley (2005, p. 253) see the place of learning styles and learning to learn as:

'...the contribution of learning styles as underpinning the strategic and reflective thinking element of an 'integrated framework for understanding thinking and learning' (Moseley et al. 2004; 2005).'

Hence, teachers should focus on variety as opposed to strengths in students' learning:

'the outcome of engaging with style should be strategy. The goal of 'personalised education' or 'Learning to Learn' whether couched as learner agency or learner autonomy, is simply freedom, and descriptions of learning style should be tools 'to break chains of habit and limitation'.'

(Hall and Moseley, 2005, p.254)

This suggests that much of the recent development of learning to learn programmes has been based on dogma and unproven successes. However, if some of the core elements are extracted and used in a critical manner (such as a variety of pedagogic approaches, and the explicit discussion of learning), it has much to offer in developing the learning of students by developing and planning for a rich and varied classroom experience.

A possible alternative to learning to learn is the use of metacognition, which according to Flavell (1979) is defined by the identification and development of metacognitive knowledge, - knowledge about the interplay between the learner, task and strategies involved, or the control processes people use to regulate their cognition (Schraw and Moshman, 1995). As a consequence this focuses on the development of planning, monitoring and evaluation of learning by the individual. Veenman (1993) extends the notion of metacognition by breaking down the planning element of metacognition into orientation (preceding planning) and systematic orderliness (including planning). In all of the definitions given, there is a central process of making explicit the intended structure of learning and the subsequent processes that are used to guide it. This is different to learning to learn in the sense that there is no conscious differentiation of students into different learner 'types', but instead sees learning as a process which must be understood and developed by the students themselves. This then suggests the use of an explicit discussion of learning within the classroom, and the use of metacognitive statements as a part of assessment feedback. Such an approach could be argued to fit well with Stenhouse's (1975) view of education as research, as it aids students to become aware of themselves as learners, particularly in conjunction with the use of active and independent learning approaches.

Assessment for learning

Assessment is an explicit element in the work of Stenhouse (1975), being seen as a part of teaching rather than a divorced process which occurs beyond the classroom as terminal examinations or tests. Assessment for Learning (AfL) plays a major role in the developing model of personalised learning, and is seen in much the same way as Stenhouse. As the third element classroom pedagogy identified in the introduction to this chapter, it is assessment which is the final focus of the review of literature below.

2.2.5 Initial results from the Pilot concerning learning and teaching

The Pilot was in part developed to widen the learning and teaching environment. There was explicit mention of fieldwork opportunities and the greater use of adults other than teachers in the guidance available to centres. The authentic nature of much of the assessment also reinforced this philosophy.

Early survey work (RBA Research Ltd, 2003) showed that the learning environment was very different to that experienced in pre-existing GCSEs. There was mention by teachers of varied pedagogies, including a much greater focus on the integrated use of ICT, questioning (both by teachers and students), critical thinking and research tasks. Also, there was a much more explicit use of links both between different elements of the course, and to other subjects. At the same time, there was explicit reference (RBA Research Ltd, 2003) to the opportunity for academically more gifted students to increase the level of challenge, whilst also offering one group of students with learning difficulties an opportunity to follow a course which could lead to a GCSE qualification. There was a greater potential for deeper understanding as a

consequence of this, and evidence from teachers that there was a resultant increased level of retention of understanding.

Textbook use was hugely diminished (RBA Research Ltd, 2003) and was seen as a resource to be used where appropriate rather than as a default setting. As a consequence of this, student focus was better as they knew that they could not 'catch up' by using textbook information as a standby position.

Where there were some concerns they predominantly centred on the lack of some skills development at Key Stage 3 (RBA Research Ltd, 2003) which made the transition to the increased skills base required of the course problematic. Although this was seen as an issue at the start of the course, subsequent development at both GCSE and KS3 tended to remedy this issue. It was also recognised (QCA, 2005) that the very different approach of the course involved risk for both teachers and students alike as they grappled with a very different curricular approach.

Finally, it was identified that there were clearer opportunities (GEES, 2006) to develop links with higher education as the content foci overlapped to a much greater extent, leading to some well publicised curriculum development and learning experiences involving schools and universities.

Hence, again the evaluations were very positive about the development of learning and teaching, with concerns being those of practitioners attempting to make sense of a different approach to learning. However, once these initial concerns had been addressed and overcome, the opportunities were obviously far reaching and well understood by those involved.

The large number of evaluations carried out on the Pilot GCSE allowed for a rich source of student views to be captured. Once again, early survey work (RBA Research Ltd, 2003) gave a basis for student views on the Pilot. Students in the first cohort of 18 partnership schools had a number of positive expectations of the course, including more fieldwork (54% of students), more interactive learning (54%), and more opportunity for personal views to be used (50%).

2.2.6 Conclusion

Personalised learning has had a difficult birth, in that it has been seen by some in the research community as having little research evidence to support its prominent position within government policy. Whilst this may be true, the classroom level elements of personalised learning such as independent learning approaches, a variety of teaching methods, student choice in building the detail of the curriculum, and the use of assessment for learning, are all elements of a more critical approach to pedagogy that the mainstream geographical education research community has advocated for some time. This is demonstrated through the evidence in this section, and the works of those such as Roberts (2003), Leat (1998) and Wood et al (2007). Personalised learning might be seen as a political attempt to 'cherry-pick' the best of pre-existing practice, but even if this is the case, it can present an opportunity to act as a framework allied to a different view of the curriculum and of assessment. In such a way it can play a conceptual role in moving my own practice from that of 'education as product' to 'education as process and research' (Stenhouse, 1975). Having considered the role of curriculum and learning in this changing approach to the Pilot GCSE, I now turn to the role of assessment.

2.3 Assessment

2.3.1 Introduction – assessment in a performative era

Assessment plays a central role in the current education system of England. It is seen as the barometer of success, being the foundation for important processes such as the tracking of progress against explicit targets, and the calculating of school league table positions. Ball (2008) argues that,

‘The value added in policy terms of the national testing regime was that the results could provide attainment data not only to compare individual students in their classrooms but also schools and LEAs in the form of league tables.’

(p. 112)

Further, Brooks and Tough (2006, p.4) state:

‘Assessment, and in particular testing, now defines much of what goes on in schools, from decisions around resources to teaching strategies in the classroom.’

Ball’s (2008) notion of the purposes of testing highlights the multi-faceted nature of assessment, with clear differences in its intended and potential uses within and beyond schools. Externally, assessment is the basis for the public demonstration of success or failure, for example as the primary data for deciding the position of a school within league tables. The legitimacy of league tables is in part founded on their use in ensuring public accountability and as a source of information for parental choice in securing a place at a ‘good school’ (Maw, 1999). James (2000) sees such performative uses as stemming from a belief across the political spectrum that the process through which improvement can be both secured and publicly demonstrated is through making schools work harder and hence show improvement through examination and testing results. However, Black and Wiliam

(2005) believe the primacy of testing 'has obscured the role that assessments can play in supporting learning at both the practical and policy level.' (p.251).

Internally, assessment is often used for comparison against personal targets as a mechanism for developing learning, as the basis for teacher appraisal, and as a predictor/early warning system for annual success in external exams. Brooks and Tough (2006, p.12) argue that in analysing the impact of the assessment regime in English education, a number of 'unintended consequences' have arisen, the result of attempting to improve test results:

- a narrowing of learning, with teachers focusing on the content most likely to be tested;
- shallow learning which focuses on how the testing will occur;
- question spotting which combines the features of the two elements above;
- risk averse teaching which stifles innovation in teaching and learning.

Assessment has become a central process within learning and teaching and school leadership and management due to the factors stated above. As such, it is of itself a complex concept as the various tasks to which it is put require alternative facets to be utilised at different times. However, the performative character of the present educational system leads to a number of tensions and ambiguities within the use of assessment which need to be taken account of and understood if robust and positive utilisation is to be made of the substantial potential of assessment to both measure and improve learning. This is demonstrated in Table 2.5, which clearly shows the type of dichotomy which can be manifest between different conceptualisations of the focus of assessment.

ASSESSMENT FOR	
PERFORMATIVITY	EMPOWERMENT
celebrates intellectual convergence	celebrates intellectual divergence
encourages extrinsic motivation	encourages intrinsic motivation
educationally/socially divisive	helps widen opportunity
trusts 'objectives' indicators of quality	trusts professional judgement
appears to raise standards	enhances learning

Table 2.5 Contrasting conceptualisations of assessment (taken from Broadfoot (2007), p.67)

This then highlights the complex tasks which assessment is required to fulfil within the present English educational system, acting as the lens through which success and performance can be measured, but at the same time increasingly being seen as a panacea for aiding the development of learners.

However, the emerging use of assessment to aid learning is only a comparatively recent development. Testing, through traditional forms of assessment has prevailed as the predominant use of assessment for a long time (James and Gipps, 1998). With the rise of the performative state, there is clear evidence that this has led to a narrowing of learning (Broadfoot et al, 1998). It is therefore necessary to define and characterise assessment, before considering its 'empowering' potential to aid the development of learning within the classroom as an alternative to seeing it as a quantitative and performance driven process.

2.3.2 Defining assessment

Assessment is the process of eliciting, interpreting, recording and making use of information concerning students' performance on a task or tasks (Harlen and James, 1997). The way in which the information gained is used will determine the type of assessment. The most common typology of assessment is that splitting the purpose as being either *summative* or *formative*.

Summative assessment (assessment OF learning) tends to occur at the end of a course or module of work, the information gained regarding attainment being used for the purpose of characterising the level of competence demonstrated by the student, and/or for the use of selection, for example as a gateway to university. This process is referred to as 'high stakes' testing, as it is often a selection barrier to further study. Summative assessment is also used for the purpose of standard setting, accountability, and systems monitoring and management.

Standard setting and accountability is based upon the assumption that by making the outcomes of education public, through assessment, teachers will alter and improve their practice to ensure improvement in student performance. However, this does not take account of the views of those such as Brooks and Tough (2006) concerning the unintended and, on the whole, negative consequences of such an approach to assessment. Allied to this is the use of summative assessment to monitor the educative system. This predominantly occurs through the use of external testing, in the form of SATs (Standard Assessment Tasks), at the ages of 11 and 14, and the taking of GCSE and A-level examinations at 16 and 18. In each case, schools, LAs (Local Authorities) and the Government will have targets which need

to be met and the use of summative assessment here will allow for the monitoring of standards.

Formative assessment (assessment FOR learning) is undertaken within the body of a course or module, and can occur at various intervals, but always as an integral part of the learning process. This results in assessment tasks which provide students with information as to how they can further their learning, and improve on past levels of understanding and performance.

One way in which formative assessment can be used is in improving the curriculum and teaching. This can be achieved through identifying worthwhile learning outcomes which are then linked to a more holistic approach to assessment tasks themselves, thus leading to an improved and broadened curriculum. This leads to a revised notion of what is useful within an assessment task, including greater use of authentic activities which challenge and extend. As such, assessment comes to be linked with a greater interest in higher order thinking, problem solving and evaluation (Gipps, 1996). As Resnick and Resnick (1992, p.59) state:

'If we put debates, discussion, essays and problem solving into the testing system, children will spend time practising these activities.'

The other potentially powerful use of formative assessment is its use as a medium for teacher/student dialogue and interaction. This sees assessment as an integral element of day to day teaching, including the use of questioning, dialogue, and reflection on the part of the students concerning their learning. This process includes the use of teacher feedback and feed-forward, as well as self and peer assessment.

Formative and summative approaches to assessment might be taken to demonstrate two fundamentally different paradigms in characterising the link between learning and

assessment. Broadfoot (2007) highlights this tension between a 'learning paradigm' and a 'measurement paradigm' (Figure 2.6).

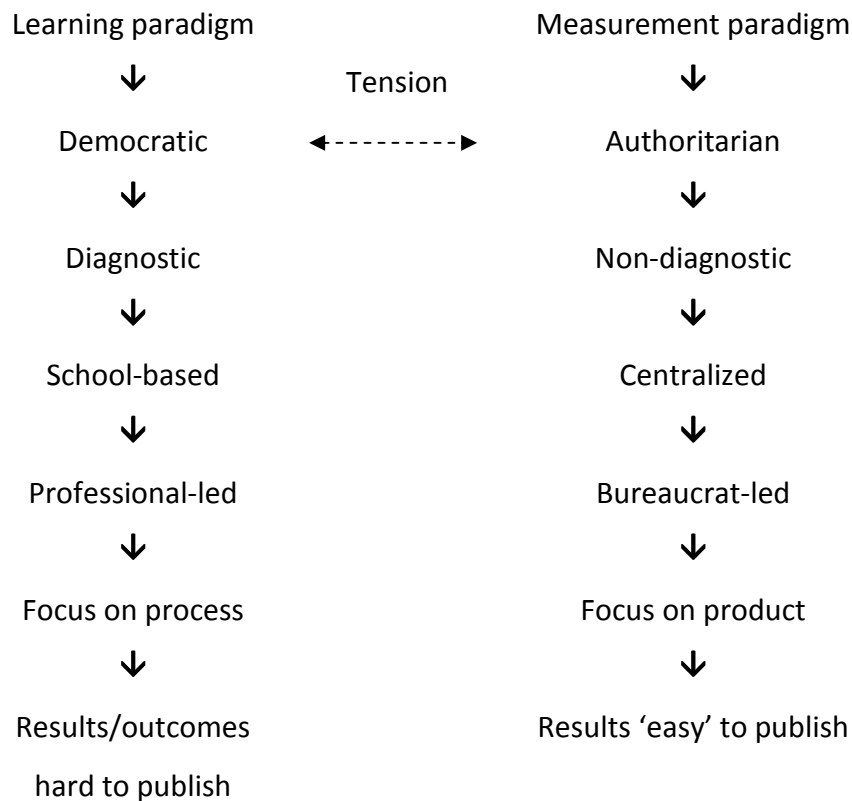


Figure 2.6 The contrasting paradigms of learning (formative) and measurement (summative) approaches to assessment (taken from Broadfoot (2007), p.79)

This shows a clear divergence between summative and formative uses of assessment. The formative (learning paradigm) focuses on the small-scale, classroom led use of assessment as a diagnostic process which includes the active participation of the student. The summative (measurement paradigm) alternatively, focuses on a centralised, product led process which provides 'easily' understood outcome data. However, another way of

conceptualising this tension, is to consider the audiences which interact with assessment (Figure 2.7)

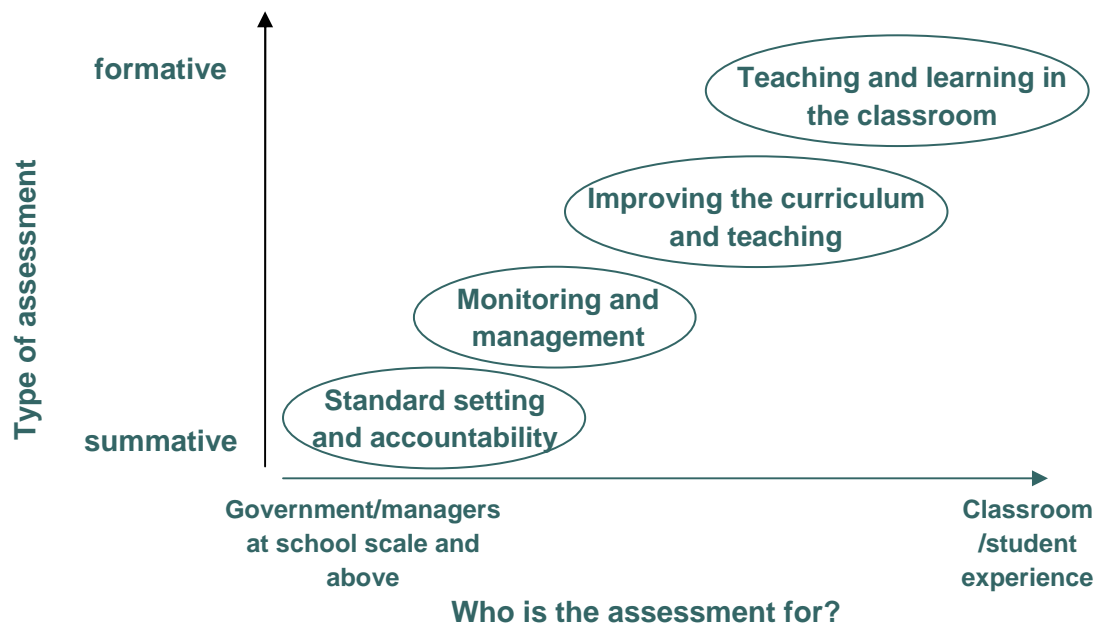


Figure 2.7 Audiences for assessment: Conceptualising the purpose of assessment as it is relevant to those who utilise it.

In this conceptualisation it is the audience which is most important in dictating the utility of the different uses of assessment. At a large scale, those in government and Local Authorities are predominantly interested in issues of standard setting and accountability. As a consequence, they are ultimately only interested in the summative characteristics of assessment. This is also true to a great degree for senior managers within schools, who will likewise be interested in accountability, but who will also take a keen interest in the monitoring and management of learning and assessment. It is only at the level of middle managers that a more formative approach will be of relevance. Subject leaders will not only be responsible for monitoring standards, but are charged with improving both the

curriculum and teaching, and hence, will use assessment more formatively. At the level of the classroom teacher, the factors already highlighted will still be palpable, but there will be a greater opportunity for a more explicit focus on the use of formative assessment to further learning. In this way, summative and formative assessment need not be seen as in tension, so much as being the focus of different audiences, each of whom has a specific interest in the use of assessment in their work.

Within the context of the present work, it is formative assessment (or assessment for learning) which is of greatest interest as it focuses on the development of learning within the classroom and how this relates to the notion of personalised learning.

2.3.3 Assessment for Learning - Background

The initial impetus for change in the perception of the use of assessment in England came from two directions, one an external inspection agency (Ofsted), the second a research report (Black and Wiliam, 1998). Ofsted published a report into standards for the academic year 1994/95 (1996), a section of which stated:

'Day to day assessment is weak and the use of assessment to help planning of future work is unsatisfactory in one in five schools. What is particularly lacking is marking which really informs pupils about the standards they have achieved in a piece of work, and what they need to do to improve; whilst marking needs to be supportive of efforts made, it also needs to be constructively critical, and diagnostic of both strengths and weaknesses.'

This reflected a consistent concern by the inspectorate that the use of diagnostic assessment in learning was poorly developed, especially in relation to the use of comments in feedback.

This concern was given huge support when Black and Wiliam (1998) reviewed the international literature focusing on formative assessment. This initial review led research identified formative assessment as one of the most important potential classroom interventions which could be used to raise standards of student attainment. This was highlighted by claims of large 'effect sizes' (i.e. the extra attainment due to a particular intervention) leading to significant learning gains across all age groups, subjects and ability levels (but especially for lower attainers).

As well as identifying the potential of formative assessment (assessment for learning), Black and Wiliam also identify a number of specific weaknesses in classroom assessment practices. These can be split into three main concerns.

Firstly, assessment methods were seen as encouraging rote and shallow learning, with little collaboration between colleagues, even where professionals signalled an interest in developing deeper learning in students. This was compounded by a lack of regular review to ensure that assessment tasks tested what they were developed to test.

Secondly, the management of assessment was weak. Teachers were often able to predict students' results in terminal examinations because their own assessments mimicked them. However, whilst this instrumental approach was widespread, there was little development in the understanding of the learning needs faced by individual students. At the same time, tasks allowed for the 'filling' of mark books, but little analysis of work was used to help

develop students learning. This was further compounded by the infrequent use of past assessment data to aid teachers in planning for learning.

Finally, there was a focus on grades and marks with little concern for written feedback/feed forward, together with comments which did occur focusing on the relative merits of answers as opposed to specific and targeted comments to take learning forward.

As a consequence of this initial review and subsequent publications, including rapid inclusion in the National Strategy, ten core principles of Assessment for Learning were developed (Assessment Reform Group, 1999), intended to change the assessment discourse in classrooms, and thereby improve and strengthen the link between assessment and learning. The ten principles state that assessment for learning should:

1. be part of the effective planning of teaching and learning;
2. focus on how students learn;
3. be recognised as central to classroom practice;
4. be regarded as a key professional skill for teachers;
5. be sensitive and constructive because any assessment has an emotional impact;
6. take account of the importance of learner motivation;
7. promote commitment to learning goals and a shared understanding of the criteria by which they are assessed;
8. help learners receive constructive guidance about how to improve;
9. develop the learners' capacity for self-assessment so that they can become reflective and self-managing;
10. recognise the full range of achievement of all learners.

Hence, assessment for learning is a framework to give support to students, leading and helping them to progress. At its centre lies the belief that students should be fully involved in their own assessments. This extends from giving them mark schemes before starting an assessment, through including them in the marking process, to feedback and target setting. But it is not only formal assessment where assessment for learning plays a part, but in 'informal' situations also, such as through discussion and questioning.

The work by Black and Wiliam was founded on earlier research; of particular note that of Sadler (1989) and Torrance (1993). Assessment for learning is closely associated with a social-constructivist theory of learning, in which the learner is an active participant in the construction of knowledge and understanding. This in turn rests on the student being in ultimate control of their own studies, with the teacher's role being one of support and understanding the extent of the learner's understanding, scaffolding further development through careful task development and dialogue. This is illustrated clearly and succinctly by Sadler (1989, p.120) who states:

'Formative assessment is concerned with how judgements about the quality of students responses (performance, pieces of work) can be used to shape and improve the students' competence by short circuiting the randomness and inefficiency of trial and error learning'

Hence, there should be a focus not only on the products of learning, but also on the processes used to develop those products. This then leads to a number of processes focusing on sharing learning objectives and assessment criteria, through informative feedback, to the development of learner skills in self-evaluating work.

A key element of this reconceptualisation of assessment is the active process of feedback and feed forward. Feedback refers to the process of diagnosing the relative strengths and weaknesses of individual students be it through questioning, dialogue, or written task. This then works together with feed forward (Torrance, 1993) which provides information to students to help them improve their learning.

2.3.4 Assessment for Learning – Considering practice

Having reviewed the nature of assessment for learning, explicit consideration is given to the following elements:

- Making learning objectives clear.
- Setting short and long term targets.
- Self and peer assessment
- The use of feedback and feed forward.

Making learning objectives clear

When an assessment is given to students to complete, they need to know what is expected of them, in order that they can understand not only how they are expected to tackle and complete the work, but also so that they can begin to understand the level of competence expected of them. This will help to give them the confidence to complete the work, as they are fully aware of expectations. This element of assessment should involve two essential features:

- 1) *Discussion* - A short discussion about the work is obviously useful, as it allows students to query anything they do not understand, and also helps to build an even deeper understanding about what is required. It may also be relevant to model outlines or answers to give a strong sense of what a good answer, and possibly a poor answer, would look like.
- 2) *Mark schemes* - A mark scheme can be given to each student, written in 'student-speak' so that they have full access to it. This will begin to give them a clear framework from which to work, so that they begin to construct a mental image of what is expected of them.

These aspects of assessment for learning need practice on the part of the students. They will not become immediately proficient at the skill of understanding the nature and use of learning objectives (although some individuals might!). However, by using this approach, students are progressively given the skills to become independent in their learning. An example of the use of learning objectives is that given by Rooney (2007). He has developed an approach called SPADES for use in the development of geographical descriptions, focusing on **S**enses, **P**arts, **A**djectives, **D**imensions, **E**vidence/examples, and **S**pelling. This can be used as a framework for helping students understand what is expected of them when completing their work. This is then augmented by the use of OSCA (**O**ur **S**uccess **C**riteria...**A**re). Again, this supports the understanding of learning objectives, and interestingly allows for focus on the process of learning as opposed to explicit use of levels which might narrow the experience for students.

Setting short and long term targets

Target setting has become one of the many core activities undertaken by all schools within England. There is now a cascading system of targets, with schools using complex and detailed data packages, such as that provided by the Fischer Family Trust at secondary level, to ascertain the level of performance which both the institution and the individuals within it should reach in any particular year. This is translated into a 'challenging' target which is reported to the local authority who in turn compares the targets received against their own estimations.

Ofsted (2003) in a document entitled *Good Assessment in Secondary Schools* states that,

'Targets can mean different things. A school or subject department, for example, will have targets to meet in terms of a percentage of pupils expected to attain grade C or better at GCSE – and a good many more. A pupil might say, at Key Stage 3: 'My target is to get a level 6 for science in my Year 9 SATs'. At Key Stage 4 pupils would almost certainly be aware of a target minimum grade for each subject that they expected to attain in GCSE or GNVQ. At Key Stage 3, however, the intended achievement for a pupil is much more likely to be expressed in terms of a 'SMART' (specific, measurable, achievable, realistic and time-related) target, perhaps based on a particular National Curriculum level description.'

(Ofsted, 2003, 11)

This demonstrates a tension between 'official' accounts of target setting within an assessment for learning framework, which is ultimately focused upon quantification and an

outcomes based definition, and a more qualitative, learning centred account which sees the educative process as wider than a levels outcome.

With such a focus on quantitative targets and league table positions, target setting has become synonymous with data and level descriptors and/or grades. It has led to a simplistic version of the process. 'Targets may be viewed as a system which can induce more effort from teachers' (Hammersley-Fletcher & Mangan, 2004, p.1). In other words, target setting becomes a process by which teachers become the main agents for change, whilst the students become passive recipients who should be guided to ensure a level of work which meets their predetermined quantitative targets.

However, with such a league table mentality, where does this leave target setting in relation to the learning of students? Target setting should not be seen as an end in itself, rather it should serve the development of learning, and should not be held as a prisoner to the current 'idolatry of measurement'.

The use of feedback

'Sometimes comments can be offending - the comment says - Not thinking enough - But I did'.

' positive and encouraging. Told what's wrong - written down or said individually. Never embarrassing'.

Student comments from the LEARN project

Feedback is a central element in assessment for learning and a complex area for consideration. Feedback should be specific, and should help to move individuals on. This means that any comments should be related to targets set before completion of the

assessment, so as to focus on the skills and understanding highlighted as important, and there should be praise as well as more critical comments (Weeden and Hopkins, 2006; Wood, 2009b). It can also be useful to write some comments as questions to which students have to respond, thereby extending their thinking. Butler (1987; 1988) found that comment only marking had a greater motivational effect in terms of assessments than the giving of grades, and indeed, that if grades accompanied comments the positive effect of the comments was diminished. However, Smith and Gorard (2005) highlight that where the use of grades is suspended, there must be a replacement with useful comments. In a small scale research project, focusing on a single school, they found that many of the comments which replaced grades were not actually formative, and

‘When asked whether the comments they received were useful, the majority of students felt that the comments did not provide them with sufficient information so that they would know how to improve.’

(Smith and Gorard, 2005, p.32-33)

There should be a summary comment on where to take the learning next, so that any skills/understanding being used can be put into a context of how they can be improved even more – feed forward (Torrance, 1993). Whilst teachers are often pushed for time within most curricula, it is important to give time to discussion of feedback with students as written comments alone may not ensure progress.

In the longer term, it is important to develop layers of feedback, so that the students can see it as an evolving situation rather than a series of isolated comments (Crooks, 1988). It is also more effective when it confirms that the students are on the right tracks and when it stimulates the correction of errors or improvement of a piece of work.

A variety in modes of feedback / forward (from here noted as just feedback) should also be considered. Boulet et al (1990) found that oral feedback had a greater positive effect than any other form of feedback, when working with 80 secondary school students in music, although they do not comment on any possible gender biases or differences. This then suggests a need for a change in the dynamic of feedback, using more focused lesson time to embed the feedback into the learning process.

It is hoped that students will develop the ability to self-assess their own work, thereby developing a critical awareness of where they are and how they can improve, as well as peer assessing others' work to give a breadth of experience (see below). Teacher feedback should contextualise the thinking and ideas of students to help them set further targets. Sadler (1989) believes that feedback should be a skill developed in students so that not only do they receive feedback from their teacher at the end of an assessment, but so that they are able to assess and feedback to themselves as they complete work. This then allows students to possess a concept of the level they are aiming for, compare the actual level at which they are working with that standard, and therefore understand how they are able to close the 'gap' whilst actually completing the assessment.

Can feedback be taken in isolation from learning, or is it inherently linked to it?

Feedback should be conceptualized as part of the wider learning process having to be contextual for the impact to be maximised. Therefore, the relationship between the style of teaching and assessment will have a definite effect on the type and effectiveness of

feedback used by the teacher. Askew and Lodge (2000) define the learning, assessment relationship closely.

<i>Model of teaching</i>	<i>Role of teacher and goals of teaching</i>	<i>Views of learning</i>	<i>Feedback discourse</i>
<i>Receptive-transmission</i>	<ul style="list-style-type: none"> * Expert * To impart new knowledge, concepts & skills 	<ul style="list-style-type: none"> * Cognitive dimensions stressed. * Learning is individual and affected by ability which is seen as fixed. * Learning involves increasing understanding of new ideas, memorizing new facts. Practicing new skills and making decisions based on new information. 	<ul style="list-style-type: none"> * Traditional discourse in which 'expert' gives information to others to help them improve. * Primary goal to evaluate. * Feedback is a gift.
<i>Constructive</i>	<ul style="list-style-type: none"> * Expert * To facilitate discovery of new knowledge, concepts, skills. * To help make connections, discover meaning, gain new insights. 	<ul style="list-style-type: none"> * Cognitive dimensions stressed, although social dimension is recognised. * Learning affected by ability which can develop and is affected by experiences. * Learning involves making connections between new and old experiences, integrating new knowledge and 	<ul style="list-style-type: none"> * Expanded discourse in which 'expert' enables others to gain new understandings, make sense of experiences and make connections by the use of open questions and shared insight. * Primary goal to describe and discuss. * Feedback as a two way

		extending established schema.	process (ping-pong)
<i>Co-constructive</i>	<ul style="list-style-type: none"> * More equal power dynamic * Teacher is viewed and views themselves as a learner. * To facilitate discovery of new knowledge, concepts & skills. * To help make connections, discover meaning and gain new insights. * To practice self-reflection and facilitate a reflexive process in others about learning through a collaborative dialogue. 	<ul style="list-style-type: none"> * The cognitive, emotional and social dimensions of learning are seen as interconnected and equally important. * The view of learning is extended to include reflection on the learning process itself and meta-learning (learning about learning) 	<ul style="list-style-type: none"> * Expanded discourse involving a reciprocal process of talking about learning. * Primary goal to illuminate learning for all. * Feedback is a dialogue, formed by loops connecting the participants.

Table 2.5 The links between the role of the teacher, views of learning and the dynamics of feedback (taken from Askew and Lodge (2000))

Table 2.5 demonstrates that the view and uses of feedback are intimately linked to the pedagogy of the teacher, as this sets the tone for the discourse. To develop a feedback system that requires less direct time spent explicitly discussing completed work, there needs

to be a pedagogical movement towards the Co-constructive end of the spectrum, so that feedback becomes more informal (most of the time), and an embedded element of learning, where a constant dialogue takes place to aid development and progress. At the Receptive-transmission end of the spectrum, it is necessary for large scale written input to make the 'gift' worthwhile and this may also be the classroom dynamic where grades play a major role in feedback with little considered input with respect to feed forward. There is therefore a suggestion that there should be a clear level of synergy between pedagogy, conceptualisation of learning and feedback. There is finally an explicit identification of Co-constructivism with active student participation in closing the learning gap, whilst the Receptive-transmission model is more closely aligned with students playing only a passive role in extending their own learning.

Self and peer assessment.

Boud (1993) defines self-assessment as:

'Self-assessment requires students to think critically about what they are learning, to identify appropriate standards of performance and to apply them to their own work. Self-assessment encourages students to look to themselves and to other sources to determine what criteria should be used in judging their work rather than being dependent solely on their teachers or other authorities...'

This is clearly suggestive of self assessment as an important element of feedback. Students need time to identify any gaps between their actual and potential performance (Sadler, 1989). They need to be able to work out why these gaps occur and identify strategies about how such gaps can be closed. However, whilst teachers can, and should, be involved in

developing such a dialogue, the students need to work out the answers for themselves. As a result, self-assessment becomes very important. This might include giving the students the opportunity to mark an assessment before their teacher does, giving their own comments, upon which a teacher can base their own observations. This gives opportunity for personal ownership of work, and can foster a supportive climate where students can admit problems without risk of loss of self-esteem (Klenowski, 1995).

Fernandes and Fontana (1996) considered the use of self-assessment in mathematics classes in the 8-14 age range. The use of self-assessment was seen as positive as it shifts the locus of control from external to internal factors. The belief in luck as a factor in success diminishes and the belief in the importance of effort in success becomes increasingly important.

An added element to this is the use of peer-assessment. This gives students the opportunity to not only reflect on their own performance, but to develop alternative perspectives on the assessment material, therefore developing flexibility. It also allows reflection of the assessment with less impact on self-esteem as they are able to use criticism of a piece of work that is not their own. It also helps develop discussion between students about their work thereby developing social skills (Weeden et al 2002). However, once again, the skills required to do this need time, both in the classroom to complete the exercise, and over a longer time period to develop such skills.

2.3.5 Critiquing assessment for learning

A number of studies have considered the positive outcomes of assessment for learning as a framework. Wiliam et al (2004) demonstrated a significant positive residual for those groups who utilise assessment for learning structures when compared to those that do not. In a

similar study, Wiliam and Bartholomew (2004) carried out a 4 year longitudinal study focusing on 955 students in London. At Key Stage 4, the progress of top groups was 33% greater than for those in middle groups, which in turn were 33% higher than for those in bottom groups. However, where individualised learning and assessment for learning were introduced, differences in value-added across the ability range were not apparent, showing a noticeable positive impact of the learning and self-esteem of the lower ability students.

Perrenoud (1998) casts doubt on the positive outcomes of assessment for learning, however. He introduces the concept of 'individualised regulation of learning', arguing that the mere presence of feedback is not enough to make marked progress. He argues that more important than feedback is a concentration on the process of learning itself. In this model, the student is deemed central to the learning process, and it is stated that without their explicit opting in to a process at a deep cognitive level, progress cannot be assured. Hence, he argues that if feedback is to be of use, there has to be an understanding of the cognitive processes that link that feedback to learning. He, therefore, further argues that teachers need to have a deeper understanding of the elements that regulate and underpin the learning process. Only through this can we truly begin to understand how to help students to progress. As such, he sees assessment for learning as too mechanistic in its approach.

Taras (2005) argues that the form of assessment for learning advocated by Black and Wiliam is confused. She states that their definition of assessment is unclear, with formative assessment being defined in two separate ways, one based on Sadler's focus on product, the other as a pedagogical process. There is also a more developed focus on the purpose or function of assessments than the processes involved. Taras believes that this leads to a

confused relationship between the two forms of assessment as they are seen as separate systems which are only tied together through the notion of 'formative use of summative tests' (Black et al, 2002, p.13). Taras advocates a return to the pioneering work of Scriven (1967) and suggests the redefining of summative and formative assessment as complementary. Any task, once completed results in a judgement (summative), but it is then the process of feedback (formative) which determines the extent to which the assessment process is embedded within learning.

Finally, Hargreaves (2005) demonstrates that as the assessment agenda has developed, it has led to a number of contrasting perceptions of its form and purpose amongst teachers. Her study of 83 teachers showed six distinct conceptualisations of the purpose and role of assessment for learning (see table 2.6). These vary from those teachers who have developed a view of assessment for learning as nothing more than a teacher led monitoring tool which relies heavily on the use of quantitative data, to those who see assessment as being wholly embedded within the act of learning. This demonstrates that even though assessment for learning has been an element of official educational dialogue for a sustained period, primarily through the medium of the National Strategy, there is still great variability in the perceptions teachers hold. Worryingly, the positive impacts which have been identified by Black and Wiliam will no doubt be lost where assessment for learning has been reformed into something other than the techniques they advocate.

- assessment whilst teaching, leading to directing and modification of that teaching;
- assessment by teaching, derived from an interpretation of Vygotsky's zone of proximal development, where once the task has been set, the teacher gauges the amount and type of help required to ensure success.

This leads to the teacher using a form of assessment almost constantly, leaving students at the 'edge of their ability', resulting in interactive assessment. Hence, the interface between assessment and learning becomes dynamic, complex and collaborative. However, like Perrenoud (1988), Dann (2002) does insist that unless students want to be involved in their learning it will not work. Whilst Perrenoud assesses how learning processes affect assessment process, Dann approaches this from the opposite direction and takes an interest in how assessment practices affect learning processes. As a result she defines assessment as learning as focusing on self-assessment, as it helps construct subsequent experiences. Hence, pupil involvement in assessment becomes a feature of learning.

2.3.6 Initial results from the Pilot concerning assessment

The Pilot GCSE had a unique assessment framework when compared with other Geography GCSE specifications. There were two distinct parts to the assessment regime, although modularisation allowed for a great deal of flexibility.

In the Core, assessment was conducted through:

- an external examination, based on the course content but within a pre-released informational context (67% of the Core, or 37.5% of the complete GCSE)
- a portfolio of three pieces of work which are developed out of the course, one of which needs to be focused on primary data collection. The portfolio should amount to approximately 1,500 words of text (33% of the Core, 16.5% of the GCSE)

It was possible to take this element of the assessment only, and receive a half GCSE.

The second year of assessment involved portfolio work based on the two optional units selected for study. The criteria and format of the assessed pieces were set out explicitly for each module and the work was moderated by the examination board in all but two units (Fieldwork and GIS – only one of which could be selected) where the work was centre moderated. Each unit in the second year of the course was worth 25% of the total assessment.

Perhaps one of the most important points to note about this assessment regime is the embedded/authentic nature of the assessment. The coursework was exactly that, work which was part of the course, and naturally arising from learning. It was not the traditional 'bolt-on' piece of work which relates to the course, but is not necessarily a direct part of it.

Early survey work (RBA Research Ltd, 2003) highlighted the perceived synergy between the course and its assessment, leading to the need for students to be actively involved throughout the course, rather than the traditional reliance on cramming at the end of the

period of study. Teachers were very enthusiastic about the variety of assessment opportunities, with the clear benefit that a number of different media could be used, including posters, presentations, and videos as well as more traditional written formats. It also allowed the more able to develop areas of study beyond that of more restricted and teacher generated studies.

There was also evidence (Biddulph & Naish, 2004) of full integration of assessment into the course, with a clear focus on Assessment for Learning as a result. This was seen as a positive development (QCA, 2004) as it reflects and develops the assessment for learning agenda promoted at Key Stage 3. As a consequence, assessment opportunities could be more creative. In some of the earlier evaluations there were issues about the 'housekeeping' elements of the assessment regime (OCR, 2004) as the framework was so different to what had gone before. However, this appeared to be an issue more prevalent in the early stages of the Pilot with greater familiarity leading to far fewer problems.

The examination format was also new, and the use of pre-release materials for the focus of the exam was new for some. The exam paper for 2004/2005 (QCA, 2005) was generally well received and the results from it were generally in line with predictions. There was a limited amount of concern over the language level (QCA, 2005) needing to balance innovation with access for less able students. It was also highlighted that the examination papers and tasks continued to promote active learning.

There was clear evidence that the paper style of the Pilot was different to that for other GCSEs (QCA, 2006). In the examination paper for 2006, there was less reliance on statistical data, and more on alternative forms of information. Map extracts were traditional, but the questions resulting from them were not, often requiring a 'far more sophisticated,

impressionistic, holistic view of the map' (QCA, 2006). Assessment of 'pure' physical geography appeared to be quite limited, physical/human interaction being a greater focus. There was also a greater emphasis on students' opinions about issues, as well as understanding of issues such as bias and the use of textual analysis.

What this review demonstrates is that there were 'technical' issues which needed to be addressed, but that these needed to be set against the wider issue of authentic assessment which allowed students to subsume some of the burden into their learning, and which allowed students to interact with the course through a number of media, thereby assessing the whole child and their multifaceted abilities. With respect, specifically, to coursework (QCA, 2006), students found the work they needed to complete exciting, challenging, stimulating and satisfying. Common comments about coursework included 'relevant', 'interesting', 'I can get on at my own speed', 'the use of IT is great', and 'able to follow up my own interests'.

2.4 Synthesis and Research Focus

As stated at the start of this chapter, any new pedagogical approach within the geography classroom needs to focus on the development of curriculum, learning and assessment. Stenhouse (1975) offers three alternative models for the development of these processes (see p.14-15), of which education as process, and education as research are two, both being characterised by approaches which relate closely to both personalised learning and assessment for learning. Shepard (2000) offers a similar consideration of curriculum, learning and assessment particularly through her emergent 21st century model of these

associated processes. However, in the case of Shepard there is no explicit place for the expertise and activity of the teacher, whilst Stenhouse (1975) identifies the teacher as a central factor in the development of a successful learning environment. By bringing the two models together it is possible to present a synthesised model which highlights the interdependence of curriculum, learning and assessment, and the central role of the teacher in mediating these processes to develop a conducive learning environment (figure 2.8)

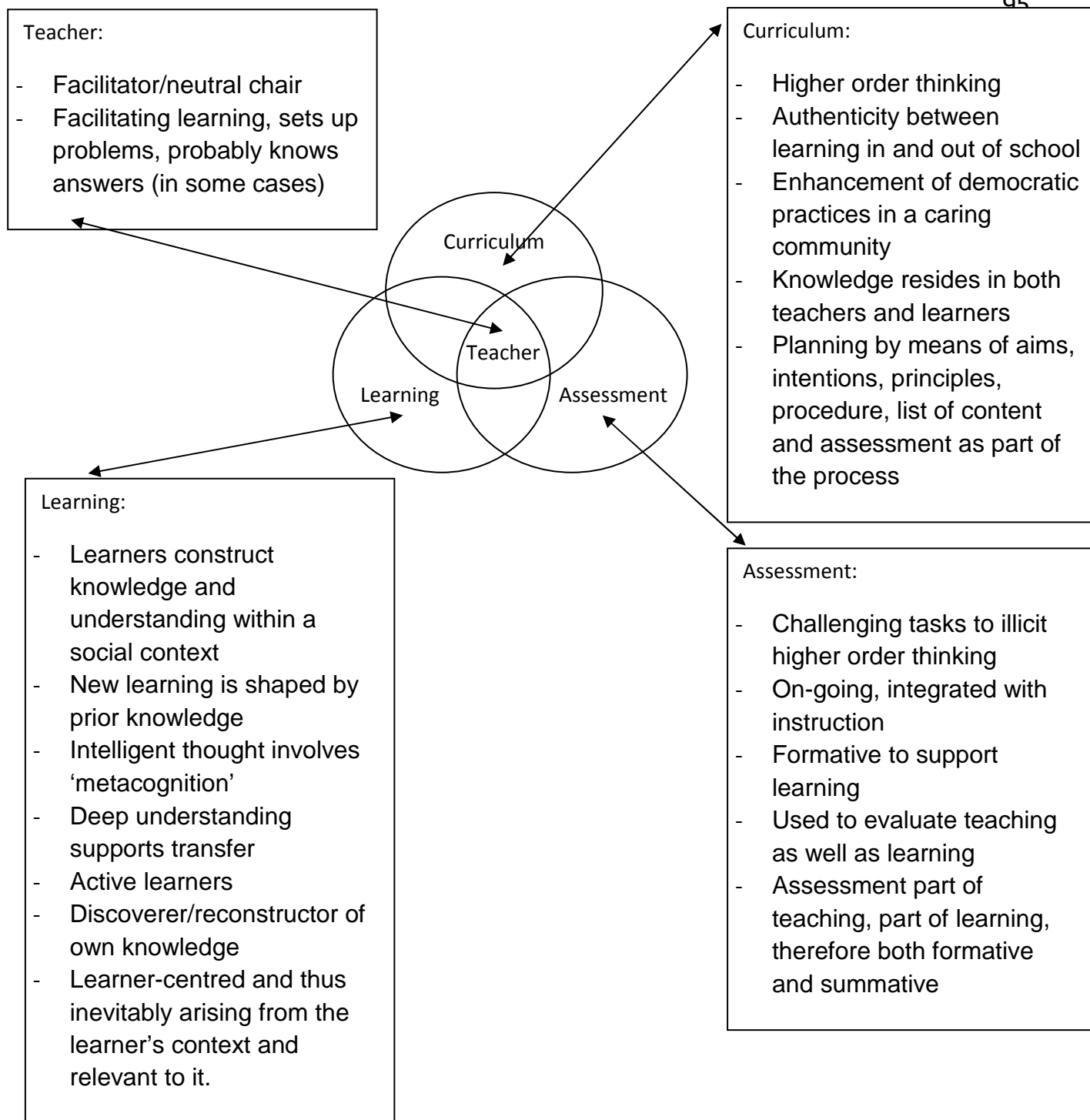


Figure 2.8 Synthesised model of curriculum, learning and assessment (based on Stenhouse, 1975; and Shepard, 2000)

The above synthesis takes elements of both Stenhouse and Shepard to create a model where the teacher acts as a facilitator for learning. They facilitate learning through setting up problems, and activities, thereby acting as a guide to the specification to mediate the

learning experience of the students. Such a facilitating role is made easier through the presentation of a curriculum which is based at least in part on high order thinking, authenticity in both learning and content which accepts that knowledge and understanding resides both in teachers and learners, and also in and out of school. As a consequence the curriculum may be seen as enhancing democratic practices in a caring community. Finally, at a pragmatic level planning is seen as occurring through a focus on aims, intentions, principles of procedure, a list of content and a view of assessment as part of the learning process.

A curriculum which enshrined higher order thinking, contextualised learning, and is in keeping with the highlighting of democratic practices, has a natural affinity with constructivist learning approaches. Hence, learning is identified as a process where learners construct their own knowledge and understanding within a social context, with prior knowledge being seen as important in shaping new learning with the ultimate outcome being deep understanding which is transferable to other contexts. In building such learning competences, there is a central involvement of metacognition which plays an important role in helping individuals develop and strengthen their knowledge and understanding. As such, whilst personalised learning may be seen as a political construct (Campbell et al, 2007) it may well offer a positive over-arching framework for learning which relates well to factors identified by both Shepard (2000) and Stenhouse (1975).

Finally, for any constructivist learning environment, supported by a flexible curriculum, assessment must play a central, positive, and supportive role. Both Shepard (2000) and Stenhouse (1975) highlight the need for assessment to be part of both teaching and learning, an integrated process which encourages challenge, reflection, and independence.

The importance of an explicit link between assessment and learning is highlighted in table 2.5 (p.80-81) within the specific context of feedback which demonstrates that the feedback discourse is closely related to both the role of the teacher and goals of teaching, and views of learning. Therefore, using the emergent model of the interdependence of curriculum, learning and assessment the following research attempted to use action research as the basis for moving from a more traditional, didactic learning environment at GCSE level to one which saw these as elements of a more holistic approach.

The research question which follows from this theoretical basis, and which is the focus for the subsequent research is:

‘To what extent can the Pilot GCSE in geography act as the basis for an emergent, active learning environment for students?’

Leading to three sub-research questions:

1. To what extent can learning, assessment and curriculum be developed to focus on active learning approaches?
2. What are student perceptions of a developing and reformed pedagogy?
3. To what extent does a reformed notion of classroom pedagogy allow students to deepen their investigation of Geography?

Chapter 3 Research Methodology

3.0 Aims and Objectives of the Research

The key research question under investigation in this thesis was:

‘To what extent does the Pilot GCSE in geography act as the basis for an emergent, active learning environment for students?’

In order to answer this question, it was clear that various methods of data collection would be required. It was also important that the use of particular methods were set within a secure philosophical and ethical framework, to make the investigation both coherent and valid.

3.1 Research in Education

The nature of research within education is both complex and contested perhaps in part due to its synthetic nature, taking influences from a number of associated disciplines, but also due to the dynamic interaction of a number of different perspectives which are taken in relation to the educative process. Watkins and Mortimore (1999), in considering the concept of pedagogy, demonstrate that different interest groups see both the nature and importance of educational research differently, in each case their perception relating to their experiences and particular interests in the pursuit of research (Figure 3.1).

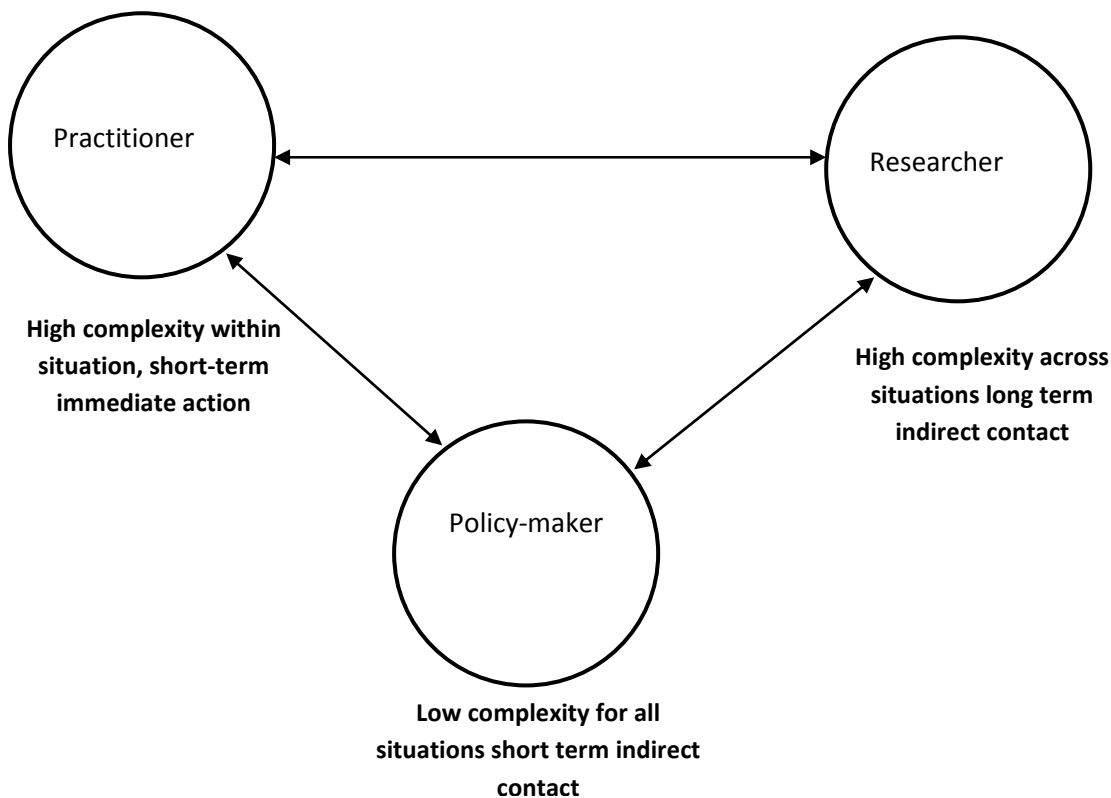


Figure 3.1 Practitioner, researcher and policy-maker knowledge

(Watkins and Mortimore, 1999)

Practitioners are characterised as being interested in practical issues, basing their beliefs on experience, what McNamara (1991) calls 'vernacular pedagogy'. Hence, they tend to focus on successful interventions and developmental ideas which can have an immediate impact on their classroom practice. They are seen as less interested in the formation and testing of theory, or the relationship their developing practice has in relation to policy.

Researchers are seen as seeking a different form of understanding, one that is 'multi-contextual so as to construct an overall model' (Watkins and Mortimore, 1999, p.12). In this case, it is the testing of theory against empirical evidence which is seen as central as a

process leading to generalisable understanding of the educative process. Hence, any exchange between these two parties is potentially difficult as their innate beliefs as to what constitutes knowledge and understanding can be very different.

A third group is now increasingly influential within the research sphere of education, the politician/policy-maker. Watkins and Mortimore (1999) see this group as increasingly influential in dictating the nature and focus of research dialogues, especially in their influence on practitioners through both control of the educative process and influence through 'official research', disseminated through initiatives such as the National Strategy within English secondary schools. Research is seen as a route to better policy and change in schools, increasingly focused on the demonstration of educational outcomes, in particular student attainment.

The different perspectives and interests which the groups in Figure 3.1 bring to education can potentially lead them into conflict. As a result, there are major concerns about the use of educational research,

'...many believe that this money is not well spent, and this was reflected in Britain in the 'Hillage Report' (1998)...sponsored by the Department for Education and Employment. First, research does not provide the answers to the questions government asks in order to decide between alternative policies....Second, research does not help professional practice in such matters as the teaching of reading or pupil grouping or teaching methods. Third, research is fragmented – lots of bits and pieces, which, though often addressing similar questions, start from different positions or use different samples....Fourthly, research is often tendentious or politically motivated....'

(Pring, 2000, p.1)

As Kent et al (1996, p.289) observe in relation to geographical educational research, 'research in geography education is sometimes thought to be problematic and open to critique'. This extends to practicing teachers who 'tend to be sceptical of the value of research and have too little time to take note of it, especially when what is published is in relatively inaccessible journals or books' (Kent et al, 1996, p.289).

However, whilst such concerns exist, are they a basis for discounting the pursuit of understanding in education? Obviously this cannot be so, as 'we want geography to be taught better than it is in order that it can be learned better than it is' (Benejam, 1993, p.81).

There is a clear tradition in the educational literature to develop and answer concerns relating to classroom practice. However, to do this, it is necessary that a coherent and reliable approach is taken within any research which allows for a valid development of understanding, and which can be held up to scrutiny and be found secure in approach.

3.2 Methodological Research Traditions

Education is a social construct, and as such is open to the debate concerning social reality. Cohen et al (2000) following on from the work of Burrell and Morgan (1979) identify four assumptions made about the nature of social reality, which together characterise different perspectives concerning social reality, and hence which directly impact on the consequent methodologies employed by researchers.

3.2.1 Epistemology

This is the study of knowledge, or what should be regarded as knowledge. It is a central concern for researchers, as it is only through a constant and consistent consideration of what constitutes knowledge that we can make value judgements concerning both the validity of others' research, and the methodological approaches of our own work. The central tension within epistemology is the nature of truth, often defined as justified, true belief. There are a number of 'schools of thought' concerning the form and reality of truth, but two which are predominantly called into service within the pursuit of educational research are the traditions of positivism and interpretivism.

In basic terms, positivism is seen as a doctrine which is closely aligned with the notion of natural scientific enquiry and philosophical empiricism (Sarantakos, 2005). It entails beliefs that only phenomena confirmed by the senses can genuinely be accepted as knowledge. This developing knowledge base is therefore derived from the gathering of facts which in turn provide the basis for laws. Thus the role of theory within this epistemological paradigm is to generate hypotheses which can then be tested to help explain natural laws (i.e. deductive approaches) (Bryman, 2004). As such, there is a clear distinction between scientific and normative (what we believe) statements as the former is founded upon observation and measurement whilst the latter may have only an anecdotal evidence base. With the centrality of hypothesis testing, research must be conducted in a value free (objective) way, so that the data gained is free of personal bias, and this is seen as one of the predominant weaknesses of positivism as this may be viewed as an unobtainable goal. As such, positivism is closely linked to the notion of objective experimentation, and is often

characterised by quantitative data collection, as the use of statistics is seen as adding a greater degree of objectivity and factually based analysis to research.

Interpretivism is founded on the belief that the social world does not act by the same processes as the natural world. This being the case, there is the need for a different epistemological underpinning. The resultant notion is an epistemology which respects the differences between people and objects and leads to the need to understand the complexities of subjectivity (Sarantakos, 2005). The focus on subjectivity requires an alternative methodological and epistemological approach to that proposed by positivism in an attempt to capture and understand the richness of human actions. This is a complex undertaking which has led to a number of different perspectives developing within the tradition. Two examples are:

- *Hermeneutics* – a methodology and theory of the interpretation of human action, hermeneutics being defined as the theory of interpretation. Whilst textual interpretation has occurred for many centuries, continental philosophy has seen the development of the interpretation of human action and artefacts (Schroeder, 2005), including the analysis of group dynamics, by generating different analytical perspectives which allow for different interpretations of the social action.
- *Phenomenology* – this focuses on how individuals make sense of the world around them. It argues that human action is meaningful in its own right and can be (uniquely) understood by the individuals involved. Hence, it is a 'disciplined investigation of the fundamental structures and features of experience, basic types of experience, and various kinds of objects that are correlated with them.' (Schroeder, 2005, p.174).

In both examples, there is an assumption of individuals or groups creating their own social reality, and hence are not focused on revealing some universal external truth, but understanding the complex interplay within a situation or issue which gives it its essential character. As such, it is not surprising that interpretivism covers a number of epistemological positions, as the spectrum of possible perceptual approaches will each focus on a different aspect of the human dynamic. However, all approaches within the tradition differ from positivism in the crucial sense that they see truths as socially constructed and always fluid, as opposed to externally, fixed and waiting to be discovered.

This simple contrast demonstrates that there is no single epistemological underpinning which can be used as the foundation for educational research. As a consequence, the epistemology underlying any research must be made clear to ensure that its belief system concerning the nature of truth is fully understood, as this will impact on the focus of analysis and the form of any conclusions which are identified.

3.2.2 Ontology

Closely associated with epistemology, ontology is the area of philosophy which considers the form and nature of reality. Within the social sciences this specifically focuses on the nature of social entities. As with epistemology, ontology has a number of conflicting theories which attempt to explain the form and nature of reality in different ways. Two such contrasting theories are objectivism and constructionism (Bryman, 2004).

The objectivist theory of reality argues that social phenomena are external facts that are beyond our influence as social actors. This suggests that these phenomena are in some way external to us, hence suggesting a real, independent universe.

The constructionist ontology suggests that social phenomena are continually created and re-defined by social actors. Hence, not only are social phenomena created through social interaction but they are constantly revised and developed. This then suggests that any research is only a construct at a point in time and cannot be seen as 'true' or definitive.

As might be expected, epistemologies and ontologies are closely linked, as there needs to be an explicit uniformity across the two. Hence, positivism is closely aligned to objectivism as they both are suggestive of external realities and truths which can be 'unearthed' by careful research. Interpretivism and constructionism are likewise closely matched as they highlight the primacy of social action and construction of truths and realities which are not universal and divorced from actors.

3.2.3 Human Relationships

In addition to any concern of epistemology and ontology, there needs to be a consideration of human nature as it pertains to them. Again, there are different beliefs relating to the nature of human relationships, especially as to how they relate to the environment. One such approach is that of *determinism* which suggests that humans are affected by their environmental surroundings leading to the possibility that events can be predicted as they have definable and measurable causes (Opie, 2004). The opposing view to this is that of *voluntarism*, which argues that all human action is voluntary, and does not occur within the

bounds of definable laws. *Possibilism* is a third view of human relationships which sees them as neither wholly determined or wholly voluntary but a combination of the two. These differences are important as they impact on the foundational beliefs which researchers bring with them to their research, the former suggesting an inherent *order* to human action, the second suggestive of inherent *complexity*.

3.2.4 Methodology

Finally methodology, in a sense the summation of the principles above, is developed in response to the foundational assumptions made about the reality of truth, and the activities of humans. This leads to one set of methodologies focusing on hard, external objective reality, resulting in scientific analysis looking for established relationships, and being driven by quantitative methods (a nomothetic approach). The other set of methodologies relies more heavily on understanding how individuals create, modify and interpret the world around them (an idiographic approach). As a consequence, the methodologies employed tend to be more qualitative in nature, whilst perhaps still including some element of quantitative work, as they seek to understand complexity and ambiguity.

The above consideration leads to a simplified subjective-objective bipolar construct, shown in Figure 3.2 (loosely based on Burrell and Morgan, 1979)

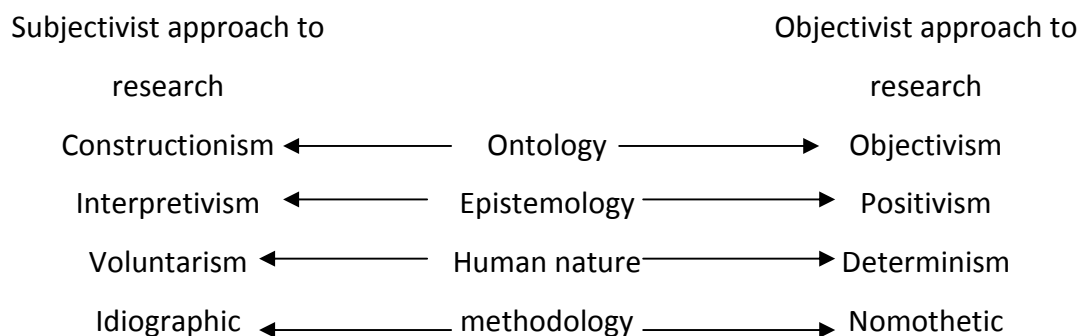


Figure 3.2 The bipolar distinction between objective and subjective modes of research.

The predominant element in the model shown above, and central to any development of a research programme, is the distinction between quantitative and qualitative approaches as these are the physical/methodological manifestations of the philosophy underlying the research.

Quantitative approaches are synonymous with the scientific method, and hence positivism. There is a focus on understanding relationships between variables, based on the formation of hypotheses and testing. As such, a mode of investigation is developed which relies on the observation of a phenomenon or phenomena which are then recorded, classified and interpreted. As such, Boardman (1993, p.85) suggests:

'Quantitative research is usually described as 'hard' research which uses rigorous methods of data collection and analysis, resulting in 'objective' findings. Research of this kind tests preconceived hypotheses already deduced from a known body of theory. The data collected are normally analysed for statistical significance in order to verify, modify or reject the hypotheses.'

(Boardman, 1993, p.85)

Hence, scientific-based research is seen as a pursuit towards an external and solid truth, external to the researcher, and follows a clear path from hypothesis creation, through collection of data to the drawing of conclusions based on statistical analysis. As such, the positivist sees research as objective, and devoid of the value laden problems which are identified through the use of more subjective techniques. However, two issues which have to be considered in relation to this claim are firstly, the admission that any observation of a phenomenon fundamentally alters the system under scrutiny, the process of 'observer distortion' (Sarantakos, 2005, p.235) and secondly, the fact that in educational research there is the innate involvement of teachers and students, which as independently minded human subjects tests the degree of objectivity which is possible.

Qualitative techniques are very different, being generally characterised as suggested above by subjectivity, relativity and the position of the individual who acts as the creator of their own social world, whilst interacting in complex ways with other such individuals. Boardman characterises this form of approach as:

'..... aim[ing] to explore situations with a view to describing, explaining or illuminating them. It believes in giving maximum flexibility to people when they agree to participate in research. Questionnaires, for example, will largely free-response, and interviews will be semi-structured or unstructured, giving respondents plenty of scope to answer in their own way.'

(Boardman, 1993, p.85)

One major element of the qualitative approach is the dynamic by which theories and concepts develop. As stated above, this happens at the beginning of a quantitative/objectivist research programme, whereas in a qualitative/interpretive approach:

'....theories and concepts tend to arise from enquiry. They come after data collection rather than before it.Also, in the interpretive approach data collection and analysis are not rigidly separated. An initial bout of data collection is followed by analysis, the results of which are then used to decide what data should next be collected. The Cycle is then repeated several times.'

(Robson, 1993, p.19)

As such, qualitative researchers aim to study all factors present within a setting, focusing on the identification and characteristics of similarities and differences. This has led to a flexible approach to research, and the admission that the researcher is embedded within the context and dynamic system which they are attempting to understand. This can be seen as a shortcoming, as it is not possible to argue for objectivity and remoteness. Hence, to what degree does the process of research itself impact on the results gained?

Recently, there has been an increasingly vocal criticism of conceiving of educational and more general social, approaches to research in the above simplified way. Pring makes the case that:

'There is a danger in educational research, as indeed in everything, of drawing too sharp a contrast between different kinds of activity or different kinds of enquiry. And these sharp divisions are frequently 'institutionalised', with members of one 'institution' sniping at members of the other. Thus, in so many theses and books, a sharp distinction is made on the basis not of 'appropriateness to task' but of 'epistemology' and even 'ontology'. Thus, the quantitative researchers are seen to have a distinctive view about the nature of our knowledge about the physical and social world. And the qualitative researchers question that view, and often reject the whole quantitative

enterprise as 'epistemologically flawed'. Researchers work within different paradigms.'

(Pring, 2000, p.44)

As a result, a great deal of research in education 'becomes polarized as either quantitative or qualitative in nature' (Brown and Dowling, 1998, p81). Brown and Dowling (1998, p.83) suggest that the most productive approach is one which is 'dialogical', combining both quantitative and qualitative approaches, thereby collapsing the bipolar distinction shown in Figure 3.2.

Ercikan and Roth (2006) argue that the perceived polarisation which is often made regarding educational research leads to a false and damaging focus on abstract philosophical debates as opposed to well considered practical research processes:

'The polar categorization of research in terms of the quantitative–qualitative distinction contributes to promoting research that emphasizes a certain type of data collection and certain construction modes rather than focusing on the construction of good research questions and conducting of good research'

(Ercikan and Roth, 2006, p.14-15)

There is a clear statement here which argues for the generation of well considered research questions which then use those methods which have the greatest potential for helping answer them, regardless of their nature. The argument made for this approach is one which relies on the identification that all phenomena have both quantitative and qualitative features, making their separating out within research agendas false. If this is accepted, the dichotomy between quantitative and qualitative methods is lost, methods being seen as

part of a single continuum as opposed to a bipolar extreme. As such, mixed methodologies become a potential approach to any research programme.

The present study focuses on developing an approach to classroom pedagogy which makes use of the three factors of assessment, learning and curriculum to develop the notion of personalised learning. It is small-scale, and developmental in nature, and as such is based in a more subjective, interpretivist approach. This gives a central position to qualitative approaches to data collection, but assimilating the arguments of Pring (2000), Brown and Dowling (1998), and Ercikan and Roth (2006) a mixed method approach will be pursued as it is accepted that this will give the greatest opportunity for the most appropriate methods of data capture to be incorporated into the research programme. Given the small scale, developmental focus of the current research, action research has been identified as the most appropriate methodological basis for data collection.

3.3 Action Research

Action Research is generally accepted to have been developed first by John Collier and Kurt Lewin in the 1930s and 1940s (McNiff and Whitehead, 2005) who both believed that individuals would be more interested and motivated with respect to their work if they had some power to help make decisions about it. This has led to the development of a complex suite of approaches which centre on the development by practitioners of identified issues or problems. Hence, McNiff and Whitehead (2005) define action research as:

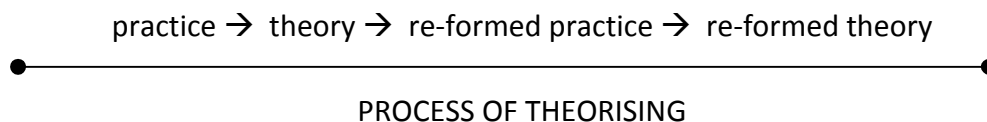
'...a form of enquiry that enables practitioners everywhere to investigate and evaluate their work. They ask, 'What am I doing? What do I need to improve? How do I improve it?' Their accounts of practice show how they are trying to

improve their own learning, and influence the learning of others. These accounts come to stand as their own practical theories of practice, from which others can learn if they wish'. (p.7)

Slater (1996, p.296) additionally characterises action researchers as seeking 'systematically, critically and self-critically', to describe and interpret the phenomena of the action in which they are engaged, in order to improve it'. Hence, the focus is on using practice to inform progress and theory. This leads to a different conception of research from that traditionally pursued by many academics, as McNiff (1993, p.39) describes, shifting from a more traditional:

THEORY —————> PRACTICE

to a revised development, first put forward by McNiff (after Whitehead, 1989) as:



Hence, action research sees practice as central to the development of theory. Within this paradigm, it is the reflexivity which occurs through critical practice which is pivotal in developing not only practice itself, but theory from this.

The notion of the reflective, critical professional playing a central role in developing their own practice has proved a popular one, and this has led to a multitude of approaches within different professions (Dick, 2006). In the case of geography, action research has proved useful and popular in a number of cases at an international scale (Gerber and Williams,

2000) as teaching professionals attempt to improve the quality of teaching and learning within the classroom within a context where theory has little immediate, practical meaning.

As Butt (2003, p.282) states,

'Action research is not the solution to all our (research) problems in geography education. However, by enabling classroom-based practitioners to directly question and interpret their own educational situations, structures and ideologies, it does offer hope beyond those methodologies which leave such aspects unquestioned or unresolved... Fundamentally, action research is predicated on the notion that research can 'make a difference', through seeking to find practical solutions to real problems. '

Action research methodology may take on a different form to suit the focus of the development of practice. As a consequence, any attempt to define action research is very difficult as it employs many different techniques in many different dynamic contexts. However, the basic foundation on which all action research is based is that of reflective practice. This leads to a simple cyclical process as shown in Figure 3.3.

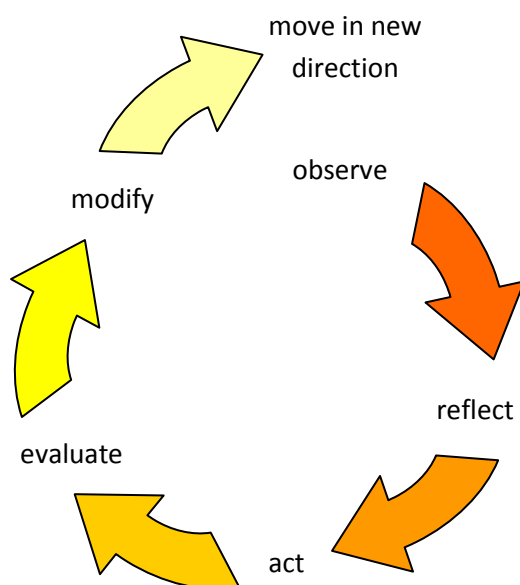


Figure 3.3 An action research Cycle (McNiff and Whitehead, 2006, p.9)

An individual starts the action research cycle by observing some element of current practice which they decide needs to be improved. For example, a teacher might believe that students are showing a lack of motivation within lessons due to observing that there is little interaction and enthusiasm. Having observed this, the teacher then reflects on why this might be the case. This reflection may include the collection of some form of baseline information, be it through an interview with students, and/or the use of a questionnaire, helping to inform the reflective process. Macintyre (2000) argues that the reflection element of the cycle should also include a review of recent literature as this will enhance the experience and understanding of the action researcher as they move into consideration of what the intervention should be which is intended to improve the situation. In the case of improving motivation for learning, baseline data may show that an over didactic approach to lessons might be a serious impediment to student learning and engagement. Having identified this as a possible major factor which needs to be explored, analysis of the relevant literature may give some clear indicators as to the type of approach which might help improve the situation.

Having reflected on the factors which may prove important in developing the issue which has been identified, an intervention is then developed, planned to help develop and improve practice. This is then carried out. In the case of a teacher wanting to improve motivation, this might be the planned inclusion of a more active pedagogy. Once this intervention has been implemented it should be evaluated, again through the use of various methods such as interviews, questionnaires, etc. Having considered the evaluation of the intervention, the final element of the cycle is to modify practice having understood and considered the evaluation. The modification completes the cycle, but may in its own right

identify new issues which have to be considered; for example, if active learning has been introduced, the evaluation may demonstrate that the assessment tasks used no longer fit in with the new pedagogy, and hence, this may become the new focus for another cycle of action research. In this way, action research can lead to a number of developmental cycles (Figure 3.4) which take on the form of a virtuous spiral of professional development.

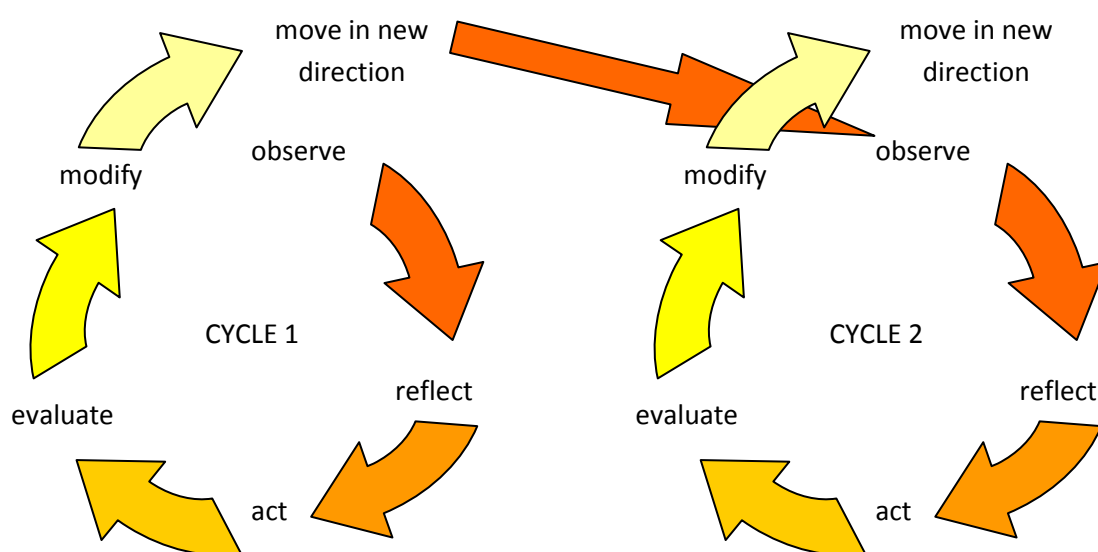


Figure 3.4 The use of multiple research cycles in action research development

There has been an increasingly complex consideration of action research, as it is developed by different groups of professionals for different purposes. Kemmis (1993) identifies three types of action research:

- *Technical action research*: this approach focuses on developing the relative efficiency and effectiveness of practice.
- *Practical action research*: aims to improve practitioner understanding and action, but does not necessarily have to occur in collaboration with others.

- *Emancipatory action research*: allowing the 'group' to take responsibility for its own development, including that which might take it outside of the accepted culture of the wider community.

The present study is located within the practical approach, by focusing on the development of the practitioner's understanding and action with the intention of improving practice and understanding of classroom pedagogy. In developing a new GCSE course, the main focus is to understand and develop a new pedagogical approach which considers and reflects on issues of curriculum, learning, teaching and assessment. As such, this is an approach which closely follows the practitioner as researcher notion of Stenhouse (1975).

Action research should be carried out in such a way as to make the results and analysis valid. As Pring states:

'Similarly with action research: the active reflection upon practice with a view to its improvement needs to be a public activity. By 'public' I mean that the research is conducted in such a way that others can scrutinize and, if necessary, question the practice of which it is part.'

(Pring, 2000, p.134)

Validity can be defined as 'the reasons we have for believing truth claims' (Norris, 1997, p.172). Many accepted forms of validity in educational research have been developed from a quantitative, positivist conceptualisation of research, which are increasingly seen as unsuitable for naturalistic research, such as action research (Lather, 1993). This has led to a development of alternative considerations of what constitutes validity within methodologies such as action research. Winter (2002) argues for two processes which he believes should become part of the action research process, and which can lead to an argument for validity. Firstly, he argues that the process must be based on collaboration,

where those involved have a voice to play an active role in affecting change (i.e. participatory action research), and secondly, as a result, there must be a process of constant self-questioning not only by the researcher, but with those included in the research. In the case of the present research, the process of self-questioning is a consistent feature of the developing pedagogical model, and the collaboration with students is demonstrated through the use of data collection, for example, the baseline information, which is used to inform the development of that pedagogical model. By seeing these processes as central to the pursuit of action research, complexity is acknowledged, and 'the research text is above all tentative, modest in its 'claims to know', aware of its ironic contingency.' (Winter, 2002, p.152). Feldman (2007) adds to Winter's conceptualisation of validity within action research by adding a number of other principles he believes are necessary to ensure the validity of action research projects. These include the detailed description of how and why data were collected, an explanation as to why the chosen narrative is more reliable than any other which might explain the results gained, and an acceptance that any proof of causality in an action research project is extremely difficult, and that,

'one's argument for the validity of a study can be enhanced if the action researchers are able to provide an explanation of why they believe that the actions led to the results. That is, it is not enough to say that 'It is true because it works.' One must also provide an explanation or theory of why it works. In addition, that theory needs to be useful for understanding other situations, and must be subjected to critique'

(Feldman, 2007, p.30)

Hence, throughout the course of an action research project there needs to be a critical interaction between both the researcher and participants, and both of these groups with the process or issue under investigation. It is only through this constant reflexivity that the

methods used and foci chosen for consideration can be demonstrated to have validity.

Further, the outcomes of the interventions must be seen as tentative, and need to be carefully considered, although through this understanding and theory, however tentative, can begin to take shape.

Because the action research approach is so often embedded within classroom practice, there is no single uniform approach in terms of the methods which are to be employed.

Hewitt (found in McNiff, 1993, p.68) includes the following as techniques which have been employed in his work in Avon, in action research projects focused on improving the quality of classroom environments:

- examination of pupils' work
- observation of pupils
- mutual observation by teachers
- questionnaires to pupils
- questionnaires to teachers
- video tapes of lessons
- diaries
- written accounts
- photographs
- audiotapes of interviews
- case studies

What this demonstrates is the potential of action research as a framework for developing mixed methodologies. Such a diversity of possible approaches may also add to the level of

validity within a project by allowing for the critical comparison between results gained from different perspectives (i.e. triangulation).

3.4 Organisational and educational context

The action research undertaken for the completion of this thesis was carried out over a period of approximately 18 months at Every School, a large co-educational comprehensive school in the East Midlands. The school has approximately 1300 students on roll, including a sixth form of around 200 students. It is located 7 miles from a large city, and serves a diverse catchment. Many of the students at the school are local children from the surrounding settlement, with a large minority coming to the school from a nearby small market town and surrounding rural areas. Academic achievement for the academic year 2004-05 was at 65% 5 A*-C GCSE grades. The school has a lower proportion of students eligible for free school meals than the national average, and the proportion of SEN students is in line with the national average.

3.4.1 Personal and organisational context

The present study was undertaken at a point approximately one year after the public introduction of personalised learning as a policy development by central government. Whilst there was a considerable amount of publicity both publicly and within schools, personalised learning as an educational framework was not initially developed within the research school. A number of other initiatives were already being developed within the school, particularly Assessment for Learning for which I had whole school responsibility as an Advanced Skills Teacher. As a consequence, the senior leadership of the school were

ambivalent about the introduction and development of personalised learning at an organisational level. However, such ambivalence meant that there was no explicit directive not to use it within learning contexts within the school. This is important, as each subject department had a great deal of autonomy to develop learning environments as they saw fit, on the condition that results were excellent when related to externally set targets. As such, it was possible to use personalised learning as a framework for departmental development as long as it could be shown to be a positive intervention in relation to results.

Within the geography department itself, there was a complex context in relation to the demographics and educational outlook of the staff involved. At the time of the research, there were four teachers within the department in addition to myself. Two were very experienced, one being a head of year with 15 years teaching experience, the other having taught for 25 years, qualified as an Advanced Skills Teacher with extensive external examining experience. The other two members of staff were both within two years of qualifying, and were therefore inexperienced but enthusiastic. Having joined the department in 2001, I had spent the first three years as head of department updating and changing the Key Stage 3 curriculum, developed through negotiation and professional dialogue within the department. As a result, curriculum development had not been as rapid as perhaps I would have liked, but it encouraged experimentation and dialogue which meant that we moved forward as a team. This was important in the department agreeing to be involved in the Pilot GCSE. However, this agreement was based on me teaching the course alone with a group in the first year and then introducing the rest of the department with resources and the curriculum already partially developed.

As described in the introduction, I have always had a keen interest in developing approaches to learning which are experiential, active, and which foster independent learning. By fusing these beliefs with a personalised learning framework, I was able to develop an 'alternative' curriculum, alternative in as much as it was very different to what I or the students had experienced before. Finally, by the time of the research period, I had taught the students in both groups for two years. This meant that I knew the students very well at an individual level, and they knew my expectations and were used to a more co-constructivist mode of working.

3.4.2 Sample

The baseline and terminal elements of the present research (described below), were carried out through working with the whole of years 7, 9, and 11 in the case of the questionnaires, and sub-cohorts of 12 students from each year group for the purpose of interviews. Given the action research nature of the research, the main research Cycles focused on the work of two groups following the Pilot GCSE course. In 2004/05, the school altered its curriculum to allow students in the upper ability range (initially two from nine groups across the year) to begin their geography and history GCSEs in year 9. Within this year group, this band of students all had a CAT score of 110 or greater. Consequently, the first action research group, for the main developmental period (academic year 2005/06) was a Year 10 group in the second year of their GCSE study.

The second group was a year younger, and hence, during the action research were members of a year 9 GCSE geography group following the first year of their course. Unlike those in the year above, these students were part of an expanded upper ability band, having been doubled in size to include the top four groups in the year group. The group

included here were those at the bottom end of this upper ability band, with most students having CAT scores of between 100 and 90.

3.5 Introduction to methods of data collection

Over the course of the action research project, there was a focus on developing classroom practice in both a positive and critical manner. For the purposes of the present research project, this led to five phases occurring within the period of data capture and pedagogic development (Table 3.1).

Period	Focus/Activities	Data capture
Spring 2005	Baseline assessment of learning and assessment (general student population)	Questionnaires on learning and assessment, semi-structured interviews
Summer 2005	Research Cycle 1 – introducing blended learning	Questionnaire
Autumn/Winter 2005	Research Cycle 2 – development of independent and active learning together with changes in assessment structures	Questionnaire, semi-structured interviews, work sampling, student diaries
Spring/Summer 2006	Research Cycle 3 – development of independent and active learning together with changes in assessment	Questionnaire, semi-structured interviews, work sampling, student

	structures	diaries
Summer 2006	Final assessment of learning and assessment (general student population, plus research groups)	Questionnaires on learning and assessment, semi-structured interviews. GCSE results

Table 3.1 The timetable for research and practice development

The research therefore took the form of a baseline assessment of current student perceptions within the school with regards to geography. This informed the initial development of interventions, with the initial development of ICT based learning, which could then be taken forward to the main period of pedagogic development, the academic year of 2005/2006. Due to the structure of the Pilot GCSE, this was split into two action research Cycles, the first terminating with the end of the first optional unit for those studying in Year 2 of the course, and at the end of the first unit of work for those in Year 1. At the conclusion of the third Cycle, a final assessment was undertaken, again focusing on the wider school population. This was done to serve two purposes. Firstly to allow comparison with the baseline assessment to ensure a greater level of validity in interrogating the data, by comparing results from two different cohorts of students, and secondly, to see if the research groups demonstrated any significantly different perceptions concerning learning and assessment when compared to the wider school community. At this point, the results of those in the research groups were also considered against target grades which had been defined by Fisher-Family Trust data.

Hence, the methods employed during the course of the research were:

- questionnaires
- semi-structured interviews
- reflective student diaries
- work samples

3.5.1 Questionnaires

Over the course of the action research four questionnaires were used. Two of the questionnaires were used at either end of the research process, and were intended to act in the first instance as a baseline assessment of pedagogical dynamics within the Geography department in general, thereby acting as a starting point for reflection and possible intervention. The third and fourth questionnaires were developed to act as a periodic reflective tool at the end of each intervention Cycle.

Questionnaires have been seen as a popular technique for collecting data (Cohen et al, 2000) and there is a large literature on their use and abuse (Bell, 1999; Bryman, 2004; Opie, 2004; Sarantakos, 2005), including the many potential pitfalls inherent in using the technique. They are useful in a diagnostic sense, in that they give a clear indication of the prevailing conditions in a situation, and help to highlight areas for further, perhaps more detailed, investigation. They also have the advantage of being able to canvas a large number of opinions at both a low cost and without the need for lengthy interviewing.

As described above, questionnaires have a number of advantages, but also have a number of disadvantages. Stimpson (1996, p.125) sees these as including:

- *Effectiveness of communication*: if the wording is in any way ambiguous, then the validity of results is compromised, even if pre-testing has taken place.
- *Heterogeneous approaches*: Responses may vary depending on the order in which respondents have completed the questionnaire – those answering in strict numerical order may have a different perception to those who read through the questionnaire before answering it.
- *Honesty*: It is difficult to measure whether respondents have been honest in their opinions, and only if they are identified on the questionnaire can interviews be used to cross-reference answers.
- *Response rate*: If the questionnaire is not administered by the researcher, but is completed by post, there are issues relating to completion rates, which can often be low.

Hence, if a questionnaire survey is to be successful, the design is paramount. The layout and structure must be clear and encourage ease of completion. It also requires clear, unambiguous instructions and questions. Cohen et al (2000, p.248-249) believe that questions should not be leading, 'highbrow', complex, and should avoid double negatives as well as too many open questions.

3.5.1.1 Aims and Objectives of the Baseline Questionnaire Survey

Initial data gathering included the use of a questionnaire survey, which had been trialled in an earlier Best Practice Research Scholarship study. The two questionnaires used in the baseline part of the research (Appendix 1 and 2) were designed with three aims in mind:

- 1) To assess the perception of three year groups (7, 9, and 11) concerning geography and the skills it develops.
- 2) To assess the perception of three year groups (7, 9, and 11) concerning their view of assessments within their school.
- 3) To assess if there was any obvious gender and/or ability differences with regards to these issues.

3.5.1.2 Questionnaire Design

The questionnaires used were intended to give an overview of student perceptions concerning Geography and assessments as described above.

- Perceptions of Geography: Geography is a subject which demands the development of a wide range of skills and concept understanding. The first questionnaire was designed to gain a clear impression of the perceptions of students regarding the study of Geography in a school context.

The questions required a response using a rating scale from 1 – strongly agree, to 5 – strongly disagree. Questions 1 to 13 were included to find what areas of the subject students enjoyed, including personal preferences (1 and 2), the main skills areas (3 to 9), and basic distinctions of the subject into different areas (10 to 13). Questions 14 to 16 were intended to begin to gain some appreciation of how students view the issue of feedback, and the extent to which they make use of it in subsequent work. Perceptions concerning the application of the subject were sought in questions 17 and 18, whilst questions 19 to 25 were included to cross-reference where students either believed that enjoyment and perceived success were linked or otherwise. The final question was

included to develop an understanding of student choices where Geography was an option rather than compulsory.

- Perceptions concerning Assessments: This questionnaire was written to develop an understanding of the preferences students have in terms of the ways they are assessed. Questions 1 to 3 were procedural questions, question 3 being specific to the questionnaires used in Every School to reflect ability banding. Questions 4 and 5 were included to gain an understanding of the students' perceptions as to how they are assessed at present (question 4), and from these, which formats they personally prefer for being assessed. This led students to a freer question asking them why they preferred the particular formats they had chosen in question 5. Question 7 asks students to consider the level of effort they believe they include when completing assessment work.

Question 8 asks the students to consider the issue of feedback, highlighting the types of feedback they find most useful when having work returned to them. Again, students were able to tick more than one box if they chose to.

Finally, question 9 was included to gain an idea of how students perceive assessments in general. A number of descriptors were offered, mixing positives and negatives together, and asking students to choose the five which most closely related to their own view of assessments

Together, the two questionnaire surveys were designed to elicit a broad view from different year groups regarding perceptions of Geography and assessment. This was seen as allowing

not only the analysis of differences between genders, but also adding an age perspective by focusing on three different year groups.

3.5.1.3 Questionnaire used at the end of Cycle 1

Cycle 1 of the action research focused on developing an internet based learning package which students would complete independently of their teachers. The aim of this questionnaire (Appendix 3) was to gain student reactions from three teaching groups who completed the work. The questionnaire has 10 statements with a ratings scale of 1 (strongly agree) to 5 (strongly disagree). The questions were devised to provide important information concerning the experience and learning preferences of students. This covered issues such as the extent of enjoyment of working on the internet (question 1 and 8), the degree to which students found the work accessible (question 3, 5, 6 and 7), and the extent to which students engaged with the task (questions 4 and 9).

3.5.1.4 Questionnaire used at the end of Cycles 2 and 3

The questionnaire used at the end of the two main research Cycles (Appendix 4) was designed with three aims in mind:

- 1) To assess the perception of the two research groups concerning the type and level of feedback received.
- 2) To assess the perception of the two research groups concerning elements of learning experienced

- 3) To assess if there were any obvious gender differences.

The first ten questions required a response using a rating scale from 1 – a little, to 5 – a great deal. These questions were included to gain a basic understanding of the level of feedback and support the students felt they had gained over the course of the Cycle, as well as how well they felt they had learned the work, and had been challenged by it. Following this initial Likert Scale element to the questionnaire, students were then invited to provide longer responses to additional questions on feedback and assessment, ICT, and a general question at the end of the questionnaire asking for any general improvements the students felt could be made in their learning.

The above questionnaires allowed for the periodic testing of student perceptions and opinions and were vital in determining the developing pedagogical approach over the course of the academic year. The questionnaires were processed and then used as the starting point for interviews which were used to support and augment the information gained from the questionnaires.

3.5.2 Interviews

Within Every School, interviews were used to support and augment the information collected from the questionnaire surveys. Interviews have been defined as:

‘a two person conversation initiated by the interviewer for the specific purpose of obtaining research-relevant information, and focused by him (sic) on content specified by research objectives of systematic description, prediction, or explanation’

(Cannell & Kahn, 1968, cited in Cohen and Manion, 1994, p.271)

Interviews can take different formats, depending on the level of structure imposed by the interviewer. Hence, Sarantakos (2005, p.268-269) identifies interviews as being characterised by 'structured', 'semi-structured', or 'unstructured' formats. In the former, the interview is almost a verbal version of a questionnaire, whilst semi-, and unstructured interviews allow for a dynamic where the interviewee can express views and opinions freely. The main advantage of an interview is the level of detail which can be taken from an interviewee. Unlike a questionnaire, the structure allows for clarification, focus on specific issues which arise during the interview, and may even develop issues which were not part of the original outline format. Both Wiegand (1996) and Cohen et al (2000) see questionnaires and interviews as complementary and related methods which are strongest when used together.

In this research, a semi-structured format was adopted, which meant the use of open ended items, which could then be discussed, elaborated upon, and where necessary clarification could be sought on issues by both interviewee and interviewer. Due to the semi-structured nature of the discussion, interviewees were able to take the discussion in different directions, relating to the perspectives and issues which most interested them, or which held the greatest concern for them. Direct quotations, where used, are only included where permission was first obtained by interviewees. In some cases, it was not possible to allow interviewees to censor the transcript as they had left school and were not easily traced. However, in all cases, interviewees' identities are kept confidential, and are recognised by their year group and gender. Interpretations of quotations are hence entirely those of the researcher.

The interview process focused wholly on students, and it was important to ensure that they clearly understood, not only that the process was wholly confidential, but that their names would not be used beyond the original tape transcript, that only the present researcher would have access to. Having completed some preliminary interviewing of two groups of Year 8 students as part of a Best Practice Research Scholarship, it was decided that the most natural and in depth interviews occurred where students were interviewed in single sex, mixed ability groups. Experience with Year 8 students had shown that where the sexes were mixed, the female interviewees had tended to be less involved, the male students wanting to dominate the process. However, when single sex interviews had been used, the differences in ability appeared to have no impact on involvement, and a greater degree of involvement by all participants was noticed.

In support of the baseline, and end of investigation questionnaires, three year groups were involved, Year 7, 9 and 11. In each case, a group of 6 girls and one of 6 boys were selected and interviewed, with each group including two higher, two middle and two lower ability students. All Year 11 students were selected only if they were taking a GCSE in Geography.

Interviews were also carried out at the end of the second and third action research Cycles, again in support of the questionnaires which the two research groups had completed. In both cases, interviews were completed with a mixed gender group from each class. Whilst stating above that single sex groups tend to elicit more information, the size of the sample groups, being smaller, led to the use of a single interview group from each class. Being aware of the tendency for males to dominate the process from prior experience, this was combated by managing the group to a greater degree by directing a repetition to questions to ensure that all interviewees had an opportunity to be involved in the discussions. The

questions asked were in part to augment the views expressed through the questionnaires, but also to take some of the experiences within the groups further to gain a deeper and more critical understanding of the work they had been completing.

Whilst the process of interviewing can produce a large data source, it has inherent difficulties and disadvantages. It is difficult for the process to be impartial, and interviewer bias must be avoided. Bias may be the result of the socio-economic background of the interviewer, as well as any, possibly subconscious, psychological effects such as body language. This may also result in the use of leading questions which must be guarded against. It is important that the interviewees want to cooperate with the interviewer, answering both accurately and truthfully. In an attempt to ensure this, the researcher chose students which he did not teach himself. It is still the case that as Subject Leader, some students were potentially guarded in replies, seeing him as an authority figure, but interviews were held in an informal way, and students were told, as stated above, that the interviews were confidential. This should minimise the degree to which the relationship between interviewer and interviewees compromises the outcomes.

3.5.2.1 Preparation for Interviews

Following an initial analysis of the questionnaire results, which involved the tabulation of Lickert Scale responses and the listing of open responses, a selection of individuals, together with their consent, was sought and the interviews were timetabled from this. A set of questions was developed from the initial questionnaire analysis to further develop the issues highlighted by the questionnaire. Interviewees were told the aims of the research

before the interview took place, and the desire for the researcher to record the interviews for later use in analysis. An opportunity for questions was given before the interview commenced to ensure that interviewees were happy with the aims, nature and intended structure of the interview. Interviews were conducted at lunchtimes, or during lesson time, where previous agreement had been made with the teachers involved.

3.5.2.2 Transcription of Interviews

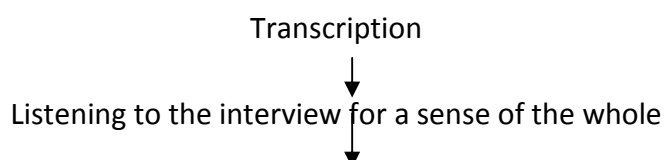
All interviews were recorded and later transcribed. As a result, the interview could be conducted without interruption, and with the full concentration of the interviewer with respect to the responses of the interviewees. Short notes were taken to ensure that important points were emphasised, and allowed for more efficient analysis post-interview.

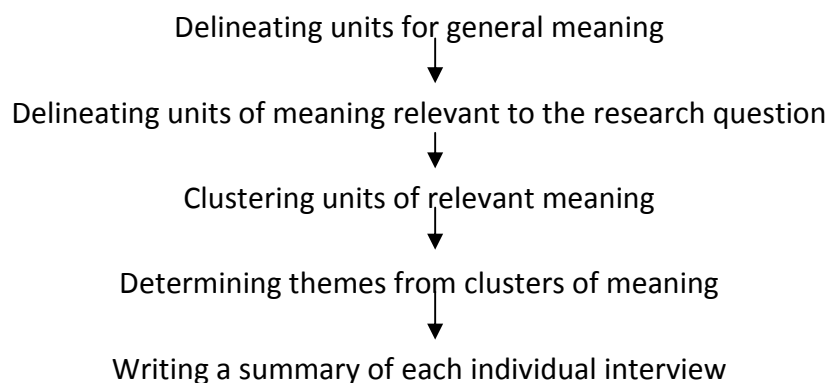
It must be accepted that whilst fully transcribed interviews allow for a full analysis, the transcription,

'...[is] not raw data, but represent a transcriber's eye view of the event'

(Powney and Watts, 1987, p.148)

The interview recordings were played a number of times before, during and after transcription to reduce any areas of uncertainty as far as possible. The transcriptions themselves were read through in conjunction with the original recordings to gain an understanding of the main strands and issues raised by interviewees. This then allowed for the identification and development of issues across the interviews held. Further to this, the following more detailed elements were followed as set out in Cohen et al (2000, p.285)





3.5.3 Reflective student diaries

In an attempt to gain another perspective of the students' opinions and experiences of the developing curriculum, it was decided to ask a small group of students from each of the two groups (4 in each) to keep a simple diary in which they would record their experiences of their learning. A list of questions was included in a blank notebook to act as a framework for their comments, especially as they initially seemed unsure as to what they should focus their thoughts on. The danger with such an approach is that students will only complete their diaries intermittently, especially as they were allowed to keep them at home, only bringing them into school at the end of each of the two research Cycles. This can lead to incomplete data. An associated limitation is that the students may believe that they need to be very positive so as to please the researcher, who as their teacher, may be deemed to inhabit a position of power. However, whilst accepting these possible restrictions, this technique was pursued, as the results could be triangulated against both the questionnaire and interview results.

3.5.4 Exemplars of work

During the course of the completion of the action research Cycles, a number of exemplars of work were collected, so as to act as a record of the types of assessment dialogues used, and also to act as a basic record of the types and standards of work completed by the students so that their 'voice' could form an element of the research through the illustration of their work.

3.6 Data Analysis.

3.6.1 Evaluation of data analysis and research design

The data collected during the current project focused on developing a critical voice for the students as the main group of individuals for whom the course was developed. This led to the use of a questionnaire to gain a baseline understanding of the views of students before starting the action research, embellished by the use of interviews to deepen understanding of those views. The data was analysed by both gender and ability in an attempt to gain a perspective from a number of different student groups. This was then developed through interviews which again reflected the variety in ability and gender across the year groups involved. The questionnaires allowed for the use of descriptive statistics to show patterns of student perceptions which could then be pursued within the subsequent interviews. This meant that there was a clear basis for directing questions during the interviews, a research design which was used throughout the course of the study.

During each of the action research cycles, the questionnaire data gained was used in a simple manner as the numbers of individuals involved was small. As a consequence, patterns of responses on Lickert scales were shown graphically to begin to understand the

spread of views and perceptions of the students in relation to learning developments. The foci for interviews were again decided as a result of the questionnaire responses. The approach used to research design therefore rested heavily on student perceptions about their learning environments, combining the results of questionnaires, interviews and diaries which were also kept by a sub-group of students, and which were analysed at the end of each cycle as a cross-comparison with the interview data.

In analysing qualitative data, there is always the possibility that bias might occur in the emerging narrative. It is easy to give particular comments from students an emphasis which outweighs their importance at the time of data collection. As a result, as data from interviews and diaries was analysed and coded, using emergent coding, an iterative process was used in an attempt to ensure that those ideas, perceptions and feedback which were more prominent in the responses of students gained a greater focus in the reporting of results. A similar approach was used for the analysis of open questions as part of the questionnaires completed; responses were coded and tallied to ensure that similar statements could help develop an impression of magnitude from the whole survey population. This led to a greater reporting of common responses in the results section of the thesis. Additionally, informal discussion was a regular feature of classroom life and was used as a way of checking that the factors which were appearing in the responses of children were indeed those which were important to the groups as a whole.

Research design can always be problematic in collaborative action research, particularly when a teacher is acting as the main researcher whilst working with their own students to affect change. There are obvious power relationships inherent in the group dynamics in such situations, and it is therefore important to be conscious of these issues when working

with students over a long period of time; it is very easy for students to develop responses which they believe the teacher/researcher will want to hear and retaining an authenticity in dialogue and data collection must be a central concern. In the case of the present study, I was fortunate enough to have taught the majority of students in both groups for at least two years before beginning the data collection period. Over those years, a consciously co-constructivist classroom had been developed with reflection, evaluation and critique of the curriculum and learning being an inherent element of regular review. As a consequence, students had generally become used to being honest about their views, although it has to be accepted that it is impossible to discount a 'halo' effect relating to the research. However, the responses of students in both questionnaires and interviews strongly suggest a willingness to be honest in their views concerning the action research interventions.

3.6.2 The role of gender in data analysis

Data was predominantly analysed by gender, as I wanted to understand the different experiences of subgroups of students. Due to the setting of groups, and a lack of ethnic minority students, gender was an obvious way of looking at different groups. Gender as a focus for analysis in the present work is also in part the result of earlier research in which I was involved (Wood, 2002; Butt et al., 2004). This research highlighted different preferences between girls and boys in relation to the forms of assessments they preferred and their use of assessment for learning by gender. Gender is a complex educational issue which lies at the intersect of several different academic fields and approaches including feminist social critiques (Oakley, 1972), sexual discrimination (Stanworth, 1981), and classroom activity (Kelly, 1988). As an element of this research area there was an emerging interest in the late

1980s and 1990s focusing on an understanding of gender dynamics within the classroom.

An example of this classroom based research is the work of Merrett and Wheldall (1992) who attempted to understand the dynamics centered on student-teacher interactions. They used a sample of 32 primary and 38 secondary schools, and looked at both frequency and positivity/negativity of interactions. Primary schools showed no discernable differences in terms of gender. However, at secondary level, boys received a majority of interactions (both positive and negative), showing little change from the earlier work of Kelly (1988). When the data was analysed by teacher gender, it showed that female staff used significantly greater numbers of negative responses to boys' social behaviour, whilst male teachers used significantly more positive responses to boys' academic behaviour. Interestingly, the level of on-task behaviour was consistent between the genders in all classes.

Another research area increasingly at the centre of gender issues is that of differential achievement and its relation to learning in the classroom. One focus in this debate has been an attempt to understand the achievement patterns in English schools, where the attainment of girls has improved at a faster overall rate than boys, including in geography (Butt et al., 2004). Cohen (1998) argues that the failure of boys is often explained in the media as the result of factors external to the students themselves. Boys are held as failing due to poor teachers, poor schools, unfair assessment and the method of teaching and learning. At the same time, girls' failure, where it exists, is identified as an internal feature, put simply, it is the fault of the individual for not working or understanding.

Smith (2003) also reviewed some of the more general issues concerning the gender gap, highlighting that explanations for it tend to be suggested to occur due to one or a combination of three factors:

- changing masculinities and the changing role of men in a post-industrial society;
- assessment and school curriculum;
- teaching and learning, including the effects of teachers and classroom environments.

At the level of the school as organisation, assessment, curriculum and teaching and learning all appear to be responsible in some way for attainment differences. However, it should be remembered that boys and girls cannot be seen as homogenous groups (Bleach, 1998) and that a large variation occurs between subgroups within each sex. Indeed Johannesson (2004) shows that data taken from a number of Icelandic teachers concerning their perceptions of students showed a greater individual difference than that demonstrated by gender.

Bleach (1998) believes there are a number of explanations for differences between the genders. *Biological explanations* are given which focus on the more rapid language development of girls (Downes, 1994) which may also play a part in their more natural social skills. There is also well established evidence that girls use both sides of the neo-cortex due to well developed neural links between the two. However, boys only use one half of their brain at a time as the links between the two halves are less well developed. *Environmental explanations* are also given, with different out-of-school experiences, perceived male and

female domains, differences in attitudes, and expectations of success (Gipps, 1994). A typology of factors can be separated into two general groups, those which are 'external' to the students, (i.e. school punishment systems, relevance of the school curriculum, social contexts, classroom dynamics, and class organisation), and those which are 'internal' to individuals, such as their behaviour, attitudes, self-theories, and development.

External factors affecting student attainment

There is evidence that the dynamics of children's lives beyond school impact greatly on their career within school. There is evidence (Murphy & Elwood, 1998) that gendered preferences concerning personal activities begin at an early age, leading to the pursuit and development of different interests and skills, and as a result, bring different learning skills to the school environment, even at Foundation level. This then has an impact on performance and attainment within school as there is a strict and narrow curriculum and testing regime which will reward some prior experiences and not others. If some of the learning experiences are contradictory to prior experiences, some children may actively channel themselves away from those experiences. Murphy and Elwood go on to suggest that,

'interventions that have broadened the styles and ways of working allowed and have concentrated on the social derivation and implications of the subjects have been found to increase the levels of achievement for both boys and girls, but particularly so for girls.'

This demonstrates that the dynamics of children's lives outside of school will manifest themselves in their studies, and only through considered approaches can such experiences be used and extended in a positive fashion.

External factors are also highlighted in a study by Harris, Nixon and Ruddock (1993) which concentrates on the link between community factors, peer group pressures and attitudes towards school, specifically focusing on how these variables affects both school- and home-work. Through interviews with Year 11 students at three comprehensives, it became apparent that all students considered that girls generally do better in school. However, there are clear sub-groups within the sexes. Some girls were highly organized at school and spend time on work, attributed by the students themselves as a result of stereotypical roles taken on in the home as organisers. Many of the boys included in the study were 'traditional macho' males, enjoying time spent with male peers, and reacting against the educational organisation and structure, often spilling over into a lack of concern for school and homework. For those boys who fail to meet expectations at GCSE, some lose their self-esteem, whilst others re-frame the failure to develop a more dominant physical persona outside of school. Unfortunately, the organised and compliant nature of many girls, developed as a stereotypical persona in the home, tends to lead to an early and unsustainable peaking in attainment at GCSE.

In an attempt to understand the motivation and cultural aspects of student work in more detail, Lightbody et al (1996) analysed 1068 questionnaires given to students to consider the issue of enjoyment of school, of subjects and to what they attributed academic success. The questionnaires were completed in a large London comprehensive and were supported by both parental and student interviews. Girls much preferred school to boys, listing amongst their main likes about school being teachers, time with their friends, fieldtrips and lessons, whilst boys only highlighted sports and clubs as their enjoyable experiences within school.

With regards to academic success, girls were more likely to highlight hard work, and how much a teacher liked a student, whilst boys highlighted how clever a person was, how talented they were, luck and access to ICT facilities. However, there was a variation with age across genders, the older students listing good teaching, liking for a subject, and teacher-student relationships, whilst younger students listed friends, family and ICT.

Within classrooms, gendered life appears to continue. Kelly (1988) clearly shows through a meta-analysis of 81 research papers that in mixed groupings girls are consistently underrepresented in classroom dialogue, being responsible for 44% of all interactions. However, they receive almost equal amounts of praise (48%), and only 35% of criticism, and 32% of behavioural criticism. However, where dialogue occurs, girls are more likely to be given a number of chances to refine answers, whereas boys are often only given one opportunity before someone else is invited to answer a question. Interestingly, Younger et al (1999) found that teachers believe they give equal access to boys and girls with respect to

classroom interaction. However, through a number of observations, it became apparent in this study that boys dominate some forms of interaction such as reprimands, direct questioning by teachers, and response to open questions. However, girls tend to dominate in seeking clarification on work-related matters. What these studies illustrate is that there is a gendered pattern of classroom interaction which sees boys gaining a predominant position in interaction with teachers.

Gender differences also emerge in group work led by students. Holden (1993) found that boys and girls at primary level will contribute differently to group work dependent on both the curriculum area and the composition of the group, the latter affecting the overall quality of discussion in groups. He found that where groups are predominated by boys, the tendency of girls towards abstract discussion is suppressed, but that they contribute to a much greater extent than when they are involved in a whole class discussion. Girls tend to contribute the majority of discussion in a languages setting such as English, whereas boys are more predominant in discussion in maths/technology. Kniveton (1997) focused wholly on an analysis of the effect of group dynamics on boys at A-level, and found that boys in single sex groups gained a significant degree of confidence, and retained a much greater level of critical knowledge and understanding through shared discussion. In both cases, there are advantages to developing groupwork in the classroom, but again, the dynamics of the gender groupings appears to make a significant difference to relative successes.

Durndell (1995) questioned 429 students across the secondary age range to analyse experiences and preferences with respect to ICT. Girls were found to be less experienced in the use of computers and less interested in developing their ICT skills relative to boys. Boys on the other hand were found to be more likely to own a computer and were found to use them to a much greater extent outside of school as part of their own personal leisure time. As a result, boys were seen as more competent and positive users of ICT.

The above studies demonstrate that there are a number of processes operating both outside and inside of the school which affect processes inside the classroom learning environment. Gendered lifestyles, and resultant disparate experiences have an impact on the mindset and behaviour of children as they enter school, as well as their subsequent development within the educational system.

Internal Factors affecting student attainment

There appear to be particular differences in the way that the sexes perceive themselves and their studies which are apparently inherent or developed as part of their internal character, and which at the same time can have an effect on overall and long term attainment in school. Burgner and Hewstone (1993) focus on *attribution theory*, the causal explanations that individuals infer for their own behaviour and that of others in an attempt to understand their social world. They gave 40 children with an average age of 5 years and 3 months various tasks to complete before considering the reasons given for success or failure. Girls

were found to internalize all factors. They saw failure as down to themselves, perhaps inducing a greater probability of falling self-esteem and lack of confidence. Boys, on the other hand, only internalized when they succeeded, thereby highlighting their own ability and progress. However, when the boys failed, they externalized that failure, putting it down to something other than themselves. Löchel (1983) believes this is a continual socialization effect due to continued social expectations, with boys showing self-enhancing attributes whilst girls show self-derogating attributes from an early age.

Dweck et al (1980) found the same characteristics in a study on self-theories and motivation. Boys showed far greater resilience in the face of failure due to their externalization of factors, where as girls saw failure as due to a lack of ability, and therefore demonstrating more persistent pessimism even when a task had been changed to give a fresh challenge. Girls were also identified as having a propensity to see failure in global terms rather than as a failure on a particular task. It was also found that where feedback is ambiguous, girls highlight the negative elements, whilst boy highlight the positive. Dweck et al believe that these attributes might well be responsible for the more experimental approach to learning taken by boys.

The above studies demonstrate that there are a large number of issues which affect dynamics within the classroom, and which taken together form a complex interplay of factors which lead to a differential engagement with learning and assessment between the

sexes. Some of these appear to be inherent, but many are due to the complex socialization process which occurs both within and outside of the school environment.

The differences stated above not only relate to differences in learning, but also different perceptions relating to assessment. Stobbart et al (1992) analysed GCSE patterns and found significant gender differences with respect to the bias of examinations, as the style of assessment is likely to influence both the way a course is taught and organized. At GCSE, girls are shown to approach coursework in a more structured and organized manner, whereas boys appear to be more relaxed about exams (Elwood & Comber, 1996). Gender differences have also been identified in terms of assessment component, with boys achieving better in multiple choice exams, but girls performing better in other styles of examination (Murphy, 1982). This is explained as a result of the different levels of language use required by candidates. It perhaps also indicates different gender reaction to context in assessment (Elwood, 1998). Girls value context (Murphy, 1995), and as a result the gendered perceptions of a task can differ. Boys and girls attend to different elements within a task sometimes leading to different responses. However, since the introduction of GCSE, boys appear to be doing less well in tests and examinations due to the increased verbal/written element even in subjects such as maths and science. Hence, the style of assessment, and its context are both important in levels of achievement, but as Stobbart and Gipps (1998) suggest, it should be equality of opportunity rather than outcome which should be ensured in assessment.

Having completed assessments, there also appears to be gendered differences in the way the sexes make use of feedback, especially in the form of self-assessment. Roberts (1991)

analysed the different uses boys and girls make of the evaluation of others to develop their own work. Girls make much greater use of feedback from teachers, most likely due to their lower level of confidence. As a result, they use evaluations in their self-assessments, therefore making faster progress. Boys on the other hand, with greater self-confidence, tend to disregard the feedback of others in self-assessment, and therefore make slower progress as a result.

The issue of gender in education is a complex one. There have been shifting interests in this field over the past forty years, and in England especially, the focus has increasingly been devoted to gender and achievement. However, this is a complex issue in its own right, and there are many and varied factors put forward to explain the differences between boys and girls performance in examinations and internal school assessments. However, it is clear that the style of assessment, the medium of learning and the form of the curriculum which gives rise to these characteristics are all important. As a consequence, the analysis of results by gender in the present study was deemed central to developing a critical approach to curriculum, learning and assessment within the action research led classrooms, as the learning environment was developed.

3.7 Ethical considerations

Research ethics are founded on a number of basic principles which should be considered explicitly when designing and undertaking research. It can be argued that there are four fundamental considerations which should be taken into account when developing any research framework, all of

which are centred on making sure the participants are fully aware of the nature of their voluntary involvement, and the responsibility of the researcher to ensure no physical or psychological harm.

3.7.1 Informed consent

This is a central element of ethical research with humans. It is based on the principle that any individuals taking part in a research project should:

- know that the research is taking place
- know what the focus of the research is
- know what the risks of the research are (if any)
- know what the data gained from the research will be used for,
- know what they will be asked to do,
- know that they can change their mind concerning their involvement at any time,
- know the degree of confidentiality and anonymity they will be afforded.

To do this, participants must be able to understand what is being suggested, and this will therefore require them to have access to the above as clear information. This might be in the form of an information sheet, or can be part of a single letter which also incorporates a consent form which they are required to sign. In the case of research with children, it is generally expected that the signature of a parent or guardian will be sought. However, best practice would suggest that the signature of both a parent/guardian and the child would demonstrate that the child has a voice in their own right. For the present research, letters were sent home asking for consent to be involved in questionnaires at points during the year (Appendix 5).

The above highlights the need to gain consent from those taking part in the research. It is not enough to gain the consent of a 'gatekeeper' such as a head teacher or parent. Their consent will

often be critical, for example, you cannot bypass the consent of a head teacher if you want to carry out research in their school, but it is not enough to gain this consent and then assume that the staff or students with whom you want to work can therefore be assumed to have given their consent also. The issue of consent should also be seen as a process rather than a hurdle, so that even when individuals have agreed to take part in research their continued participation should not be assumed.

In giving consent, there should also be no incentive given (unless there is a clear reason for this, and it is very much token) as this might encourage individuals who would otherwise not want to participate to be included in research.

3.7.2 Autonomy of participants

It must be remembered that participants in research have given their voluntary consent to be involved. As a consequence they are free to withdraw at any time from the research, and this should be made clear to them at the start of the research. Additionally, they should not be asked for a reason for deciding to terminate their involvement.

3.7.3 Anonymity and confidentiality

The level of anonymity within a project needs to be clearly defined to all concerned before the research begins. In many cases, it is crucial to ensure that those involved cannot be identified in any subsequent writing. This may include the use of false names, or proxies, e.g. 'student x' or 'teacher y', as well as not making explicit other pieces of information, such as job titles and/or gender. In the case of organisations, it also includes not using school

names and specific geographical information which could be used to pinpoint location. It can be difficult to find the correct balance as it is often important in the context of research to give background socio-economic information, but a balance must be struck; it might even be useful to ask a colleague to read a description of a school to see if they can identify the school, before publishing the description to a wider audience. The importance of this is that it is sometimes possible to piece together elements of information which can then be used to identify an individual or groups of individuals. This should be carefully considered by the researcher when writing, but also together with participants when considering consent, and research design. However, on occasion individuals actually want to be identified, and if this is the case, then this should be taken into consideration, but should be handled sensitively, particularly through the checking of the extent of any identification with the subject.

Confidentiality relates to the protection of any data collected during a project. All researchers should ensure that they understand the content of the data protection act and again they should inform participants of their intended method of ensuring data are secure.

3.7.4 Research with vulnerable groups

It is important that researchers consider ethical issues focusing on vulnerable groups. In the case of educational research this is particularly important in relation to children (generally defined as an individual below the age of 18).

The present research, being positioned within the action research tradition, needs to take especially careful account of research ethics issues, as the relationship between the researcher and subjects is much closer than in traditional forms of research (Campbell and

Groundwater-Smith, 2007). In the case of the present project, a number of systems were put in place to ensure an ethical approach. Firstly, students were informed at the start of the period covering the main action research Cycles that I was involved in developing their curriculum by introducing new styles of learning, but that this was in keeping with the approach of the course, and that I would have carried out such developments anyway, even had I not been recording the experiences involved for research purposes. I informed students that I would like to gain their insights and opinions periodically, but that this would be optional, and that they need not take part in this if they did not wish to do so.

The students who had agreed to keep a reflective journal or to be involved in interviews were asked to take a letter home to read with parents (Appendix 6 and 7) and if they were then willing to take part, sign the letter together with their parents and return to myself. In the letter it not only outlined the reasons for completing the research and the precautions taken with respect to confidentiality and anonymity, but also makes it clear that the students can withdraw from the process at any time.

At subsequent points of the research, for example before starting an interview, students were again asked if they would like to be involved or withdraw from the process. When periodic questionnaires were completed, students in the groups involved were asked not to put their names on the questionnaire, not to complete it if they did not want to, and that the results would be used to inform further development of the course, my own research, and possibly published academic articles. In the case of those only completing questionnaires, letters were not sent home asking for permission. It was assumed that as the students ranged in age from 13 to 15, and given the uncontentious nature of the questionnaires in that they focused on learning approaches rather than personal issues, it

was felt that the knowledge and agreement of the head teacher, together with the choice of students was more than enough to see this element of data collection as ethical.

Finally, as the cycles unfolded, interim findings were shared with the groups informally to gauge whether intended developments in the interventions were deemed to be a positive step, so that the student body as a whole had a level of input concerning the development of their learning.

3.8 Conclusion

The research methodology adopted for this thesis could be considered to include both quantitative and qualitative techniques. The approach, whilst being mixed, was essentially both interpretive and critical, in that it acknowledged that the nature of the data collected could not be value free, and was hence subjective in nature, in some cases being developed through 'mutual agreement'. Hence, the techniques used were those which were believed to be the most appropriate for the collection of the relevant research data. As such, the research question 'To what extent does the Pilot GCSE in geography act as the basis for an emergent, active learning environment for students?' lent itself to the use of questionnaires, diaries and interview techniques.

Through the use of the above research tools, three Cycles of action research were eventually undertaken, based upon the results of a large scale baseline study used to identify and frame the initial development foci. It is to these results which we now turn.

Chapter 4 - Baseline Results

4.0 Introduction

Having identified the potential of the Pilot GCSE to develop a synergy between curriculum, assessment and learning, it was decided to collect baseline information about the current views of students concerning their experience of the Geography curriculum throughout Key Stage 3 and GCSE. As described in Chapter 3 this was achieved through the use of two data collection opportunities. Firstly, the results from an annual questionnaire used for internal quality assurance was used to gain an understanding of student views concerning preferred learning activities in the subject. Secondly, a questionnaire was developed to look in more detail at the experience of students concerning assessment.

4.1 Learning in Geography

A sample of Years 7, 9 and 11 was analysed to understand perceptions of learning in Geography. The questionnaire (Appendix 1) allowed for analysis by gender and ability, and asked students to give their views concerning their learning approach preferences in the subject, and their level of confidence concerning the same areas.

4.1.1 Year 7

The results for Year 7 taken as a whole cohort show a number of similarities between sexes, but also some important differences. Table 4.1 shows the level of correlation between the

sexes for the responses given, for all questions, and those focusing on learning preferences (questions 3 to 9) and confidence (questions 19 to 25)

	Correlation of Percentages agreeing to statement
All questions	0.655
Learning preferences	0.928
Confidence	0.684

Table 4.1: Correlation between responses given by boys and girls

The level of correlation in terms of preferred learning approaches between the two sexes is high (0.928), and this is reflected when looking at the data for the Year 7 cohort. Both groups show a greater preference for ‘active’ learning approaches (Figure 4.1), with the use of computers, the opportunity to do fieldwork, and the development of investigations and projects, all being popular. However, few individuals of either sex highlighted writing as a preferred approach to learning.

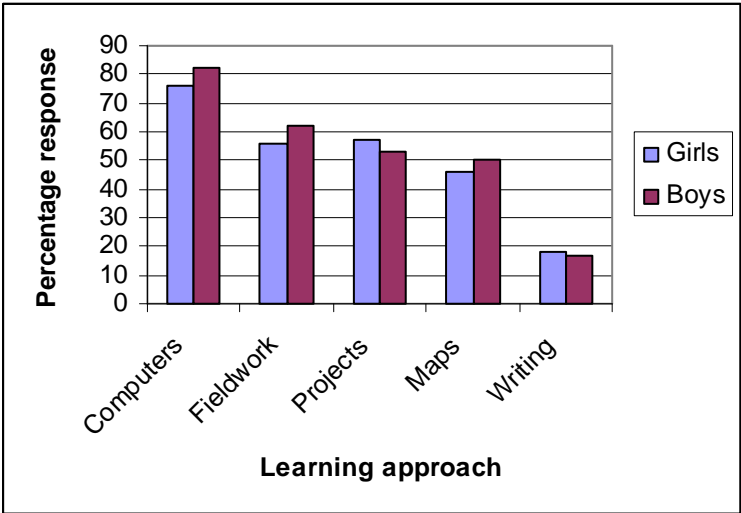


Figure 4.1 Summary of some preferred learning approaches in Year 7

With regards to student confidence in learning through different approaches, there is less of a correlation between the results (0.684). In most of the identified approaches, boys are more confident than girls, including discussion in class, fieldwork exercises, and particularly, the completion of problem solving. Both sexes are confident in the use of computers, and girls actually show a greater overall level of confidence in completing projects than the boys (Figure 4.2). However, the results demonstrate that the boys are generally more confident in many learning activities.

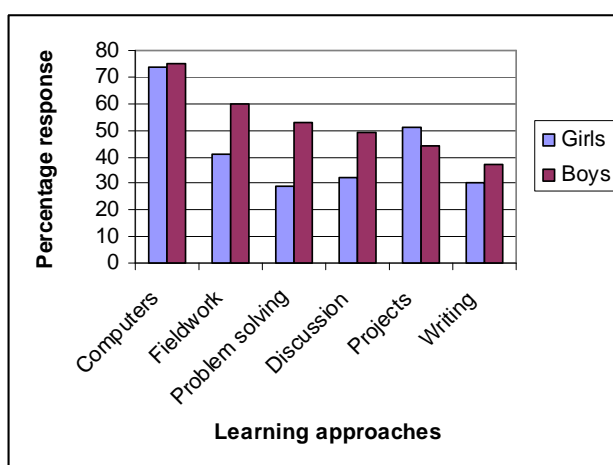


Figure 4.2 Summary of level of confidence in learning approaches in Year 7

The results suggest that Year 7 students prefer to learn through active learning approaches, and that the use of writing tasks is the most unpopular approach as a consequence. Also, boys appear more confident in their learning in geography than girls in general terms.

This pattern is less well defined when considering students of different abilities. The questionnaire distinguished between students from three ability bands as identified in banded used by the school. The green band is low ability, consisting of approximately 20 students a year, a middle ability blue band of approximately 120 students a year, and a top ability red band of approximately 120 students a year. Taking the questionnaire as a whole, there is variable correlation between the various groups (table 4.2)

By Gender	Correlation of Percentages agreeing to statement
Green boys vs green girls	0.260
Blue boys vs blue girls	0.479
Red boys vs red girls	0.734
By ability	Correlation of Percentages agreeing to statement
Boys	
Green vs blue	0.608
Green vs red	0.476
Blue vs red	0.602
Girls	
Green vs blue	0.323
Green vs red	0.517
Blue vs red	0.764

Table 4.2: Correlation between responses given by boys and girls taking ability grouping into account

The level of correlation between the sexes appears to increase with ability, suggesting little correlation for the less able, but more uniform opinions for those of high ability. When the patterns are considered for those questions specifically relating to learning preferences, there is a far stronger correlation in the results found (Table 4.3).

By Gender	Correlation of Percentages agreeing to statement
Green boys vs green girls	0.674
Blue boys vs blue girls	0.847
Red boys vs red girls	0.869
By ability	Correlation of Percentages agreeing to statement
Boys	
Green vs blue	0.837
Green vs red	0.727
Blue vs red	0.816
Girls	
Green vs blue	0.647
Green vs red	0.630
Blue vs red	0.792

Table 4.3: Correlation between responses given by boys and girls taking ability grouping into account

There are generally strong correlations for both gender and ability groups, reflecting the high level of correlation for the year group as a whole, although as with all questions, learning preferences are less obviously correlated between the low ability girls and the other ability groups in their sex, although due to the small number of respondents (n=5), there might well be distortion in the correlations for this group.

All ability groupings show a strong preference for active forms of learning. Of particular note is the very low percentage of high ability students who show a preference for written exercises (boys – 4%, girls – 6%), which is in stark contrast to a clear preference for fieldwork and the use of computers.

There is a less consistent pattern when considering those questions focusing on confidence (Table 4.4).

By Gender	Correlation of Percentages agreeing to statement
Green boys vs green girls	-0.193
Blue boys vs blue girls	0.629
Red boys vs red girls	0.853
By ability	Correlation of Percentages agreeing to statement
Boys	
Green vs blue	0.431
Green vs red	-0.101
Blue vs red	0.668
Girls	
Green vs blue	-0.418
Green vs red	-0.133
Blue vs red	0.867

Table 4.4: Correlation between responses focusing on confidence given by boys and girls taking ability grouping into account

Once again, accepting the restrictions in the results for greens, there is a relatively strong correlation by sex for both the blue (mid ability) and especially the red (high ability) groups, showing a similarity between boys and girls of equivalent ability in their levels of confidence although high ability girls show consistently higher levels of confidence. They are most confident about learning through the use of computers, and least confident about their writing (see Figure 4.3).

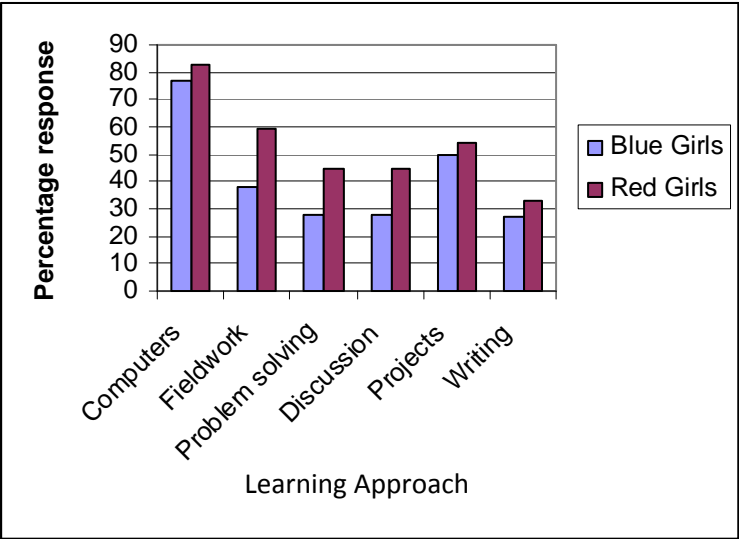


Figure 4.3 Levels of confidence by learning approach for mid and high ability girls, Year 7

The boys show a variable pattern in their confidence (Figure 4.4). The high ability boys are most confident in their use of computers (92%), which is also the case for the mid ability (blue) boys (68%), whilst the low ability (green) boys are most confident in carrying out fieldwork (71%). The high ability boys also show a greater degree of confidence in discussion and projects when compared to their less able peers.

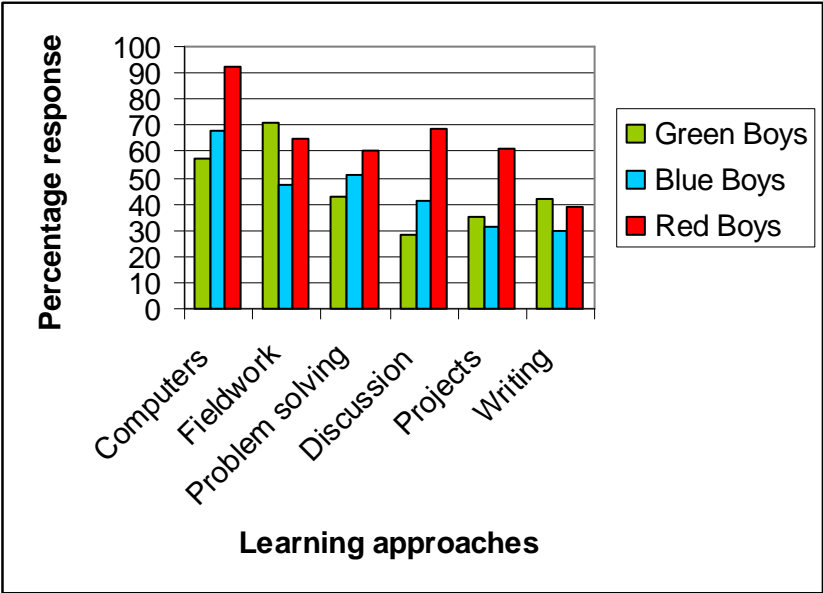


Figure 4.4 Levels of confidence by learning approach for ability bands of boys, Year 7

These results show that there is a level of difference and complexity in the learning dynamics of student cohorts in Year 7. The results demonstrate that neither ability nor sex is a clear determining factor in learning preferences and confidence, and that whatever differences do occur, active learning approaches are preferred by all groups of students, with lower levels of confidence and preference for learning in relation to writing.

4.1.2 Year 9

The results for Year 9 taken as a whole group again show a significant degree of similarity between sexes. Table 4.5 shows the level of correlation between the responses given, for all questions, and those focusing on learning preferences (questions 3 to 9) and confidence (questions 19 to 25)

	Correlation of Percentages agreeing to statement
All questions	0.799
Learning preferences	0.809
Confidence	0.811

Table 4.5: Correlation between responses given by boys and girls

The level of correlation in terms of preferred learning approaches (0.809) and confidence (0.811) in learning approaches between the two sexes is quite high. Both groups show a greater preference for active learning approaches (Figure 4.5), with the use of computers, the opportunity to do fieldwork, and the development of investigations and projects, all being popular, similar to the pattern in Year 7. However, there are some notable differences. Whilst neither sex identified writing as a popular learning approach, boys were

significantly more positive (22%) than girls (8%), and boys show a clear preference for discussion in lessons (60%), where girls show far less enthusiasm for this type of activity (23%).

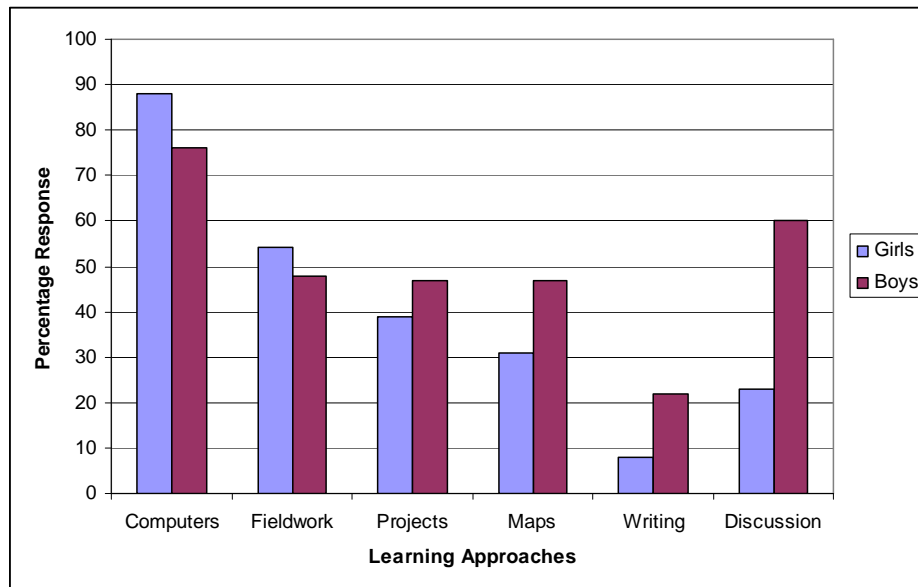


Figure 4.5 Summary of some preferred learning approaches in Year 9

With regards to student confidence in learning through different approaches, there is again generally strong correlation between the results. In most of the identified approaches, boys are more confident than girls (Figure 4.6), including use of computers in class, and particularly in discussion as a part of learning. Whilst the results demonstrate a strong similarity in views, it is also true that the boys are generally more confident in the majority of learning activities, girls only showing a slightly greater confidence in writing, an activity they have identified as not enjoying. However, differences are far smaller than those found in Year 7.

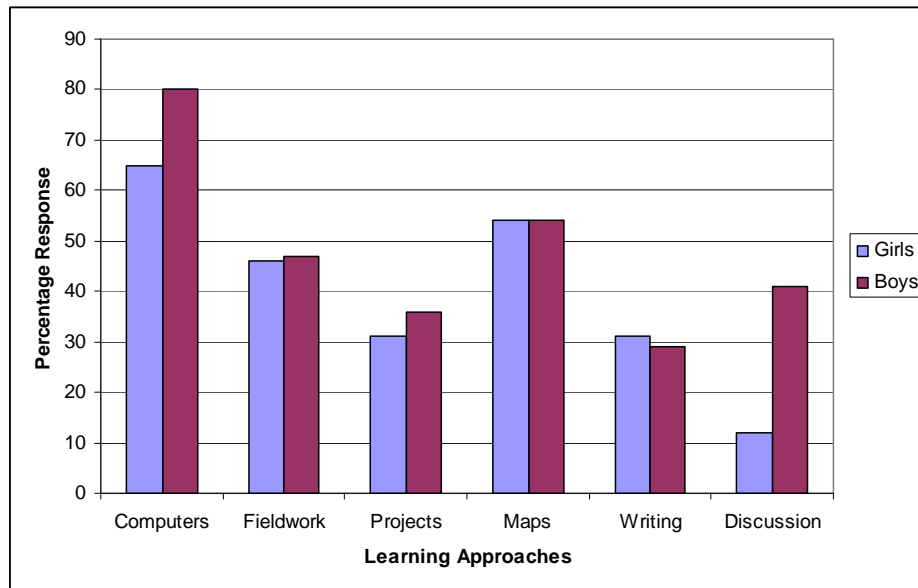


Figure 4.6 Summary of level of confidence in learning approaches in Year 9

The results suggest that Year 9 students, as with their Year 7 peers, prefer to learn through active learning approaches, and that the use of writing tasks is the most unpopular approach as a consequence. Also, boys appear more confident in their learning in geography than girls.

However, this pattern is less well defined when considering students of different abilities.

Taking the questionnaire as a whole, there is variable correlation between the various groups (Table 4.6)

By Gender	Correlation of Percentages agreeing to statement
Green boys vs green girls	0.496
Blue boys vs blue girls	0.562
Red boys vs red girls	0.551
By ability	Correlation of Percentages agreeing to statement
Boys	
Green vs blue	0.633
Green vs red	0.276
Blue vs red	0.511
Girls	
Green vs blue	0.634
Green vs red	0.545
Blue vs red	0.545

Table 4.6: Correlation between responses given by boys and girls taking ability grouping into account (Green - low ability, blue – mid ability, red – high ability)

The level of correlation between ability groups and sexes is generally quite low, showing no clear pattern in similarities and differences between groups. This seems to suggest that in the case of the questionnaire overall, there is no obvious pattern in preferences when ability within sex, and across sexes is considered. However, when the patterns are considered for those questions specifically relating to learning preferences, there is a far stronger correlation in the results found (Table 4.7).

By Gender	Correlation of Percentages agreeing to statement
Green boys vs green girls	0.736
Blue boys vs blue girls	0.758
Red boys vs red girls	0.691
By ability	Correlation of Percentages agreeing to statement
Boys	
Green vs blue	0.742
Green vs red	0.432
Blue vs red	0.762
Girls	
Green vs blue	0.950
Green vs red	0.913
Blue vs red	0.978

Table 4.7: Learning preferences Correlation between responses given by boys and girls taking ability grouping into account

Here, there are generally stronger correlations for both gender and ability groups, reflecting the high level of correlation for the year group as a whole. The highest level of correlation is between the various female ability groups, which may suggest that learning preferences are similar throughout with lower levels of correlation when compared against the boys by ability. The level of correlation between the male ability groupings is lower than that for the girls. This suggests that for the girls at least, there are larger differences in learning preferences on a sex basis than on an ability basis. The same cannot be said for boys. However, in all cases, the pattern of preferences is similar overall to those shown for the whole cohort in Figure 4.6.

As with Year 7, all ability groupings generally prefer active forms of learning. Of particular note is the very low percentage of high ability students who show a preference for written exercises (boys – 0%, girls – 10%), which is in stark contrast to a clear preference for the use

of computers in learning. Also, whilst the whole cohort data suggested that boys like discussion, this result is actually skewed by a very large percentage of more able boys (85%), who enjoy discussing issues. The other two male ability groups like this form of learning less, especially low ability boys (29%).

There is a more complex pattern when considering those questions focusing on confidence (Table 4.8).

By Gender	Correlation of Percentages agreeing to statement
Green boys vs green girls	0.898
Blue boys vs blue girls	0.345
Red boys vs red girls	0.832
By ability	Correlation of Percentages agreeing to statement
Boys	
Green vs blue	0.823
Green vs red	0.889
Blue vs red	0.904
Girls	
Green vs blue	0.241
Green vs red	0.624
Blue vs red	0.688

Table 4.8: Correlation between responses focusing on confidence given by boys and girls taking ability grouping into account

When considering cross sex correlations within ability groups, there is a strong correlation in the low and high ability groups, but not the middle ability. There is also much stronger correlation across the ability bands for the boys than there is for the girls. This suggests that there is little difference in confidence levels in relation to ability for boys, confidence being relatively high throughout, but a greater impact for girls. As with learning preferences, there is generally higher confidence in the use of computers, and in the use and drawing of maps.

However, low ability students generally have less confidence in their ability to complete fieldwork successfully, show little confidence in discussion, and show no confidence in carrying out projects. The levels of confidence in writing is generally low, even for the more able, whilst it is the mid and high ability boys who are most confident in discursive activities, mirroring their preference for this approach to learning.

4.1.3 Year 11

The results for Year 11 are for the whole cohort only, as students are taught in mixed-ability groups, and as a result of the anonymous nature of the questionnaire, account could not be taken of ability with this year group. Table 4.9 shows the level of correlation between the responses given, for all questions, and those focusing on learning preferences (questions 3 to 9) and confidence (questions 19 to 25)

	Correlation of Percentages agreeing to statement
All questions	0.460
Learning preferences	0.369
Confidence	0.583

Table 4.9: Correlation between responses given by boys and girls

The level of correlation in terms of preferred learning approaches between the two sexes is quite low (0.369) (Table 4.9). Both groups show a greater preference for 'active' learning approaches (Figure 4.7), with the use of computers, the opportunity to do fieldwork, and the development of investigations and projects, all being popular. This continues a clear

trend from years 7 and 9. However, there are significant differences, with more boys preferring to use computers when compared to girls, with the reverse being true of fieldwork. Boys also show a greater preference for the use and drawing of maps, and problem solving exercises.

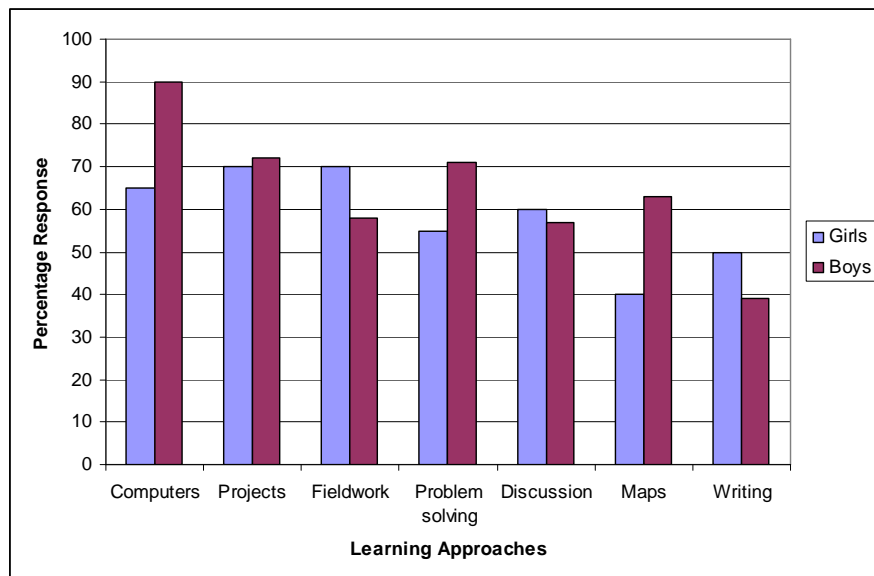


Figure 4.7 Summary of some preferred learning approaches in Year 11

With regards to student confidence in learning through different approaches (Figure 4.8), the results reflect preferences in learning, although as with Years 7 and 9, boys show a generally higher level of confidence than girls. In fact, it is the case that Year 11 boys are more confident than the girls in almost every learning approach identified in the questionnaire, even writing. Boys are far more confident in their use of computers, problem solving and discussion, with the girls only showing a greater confidence in their ability to complete fieldwork exercises. Boys are not particularly interested in writing (39%), they are nevertheless relatively confident (60%) in completing such exercises.

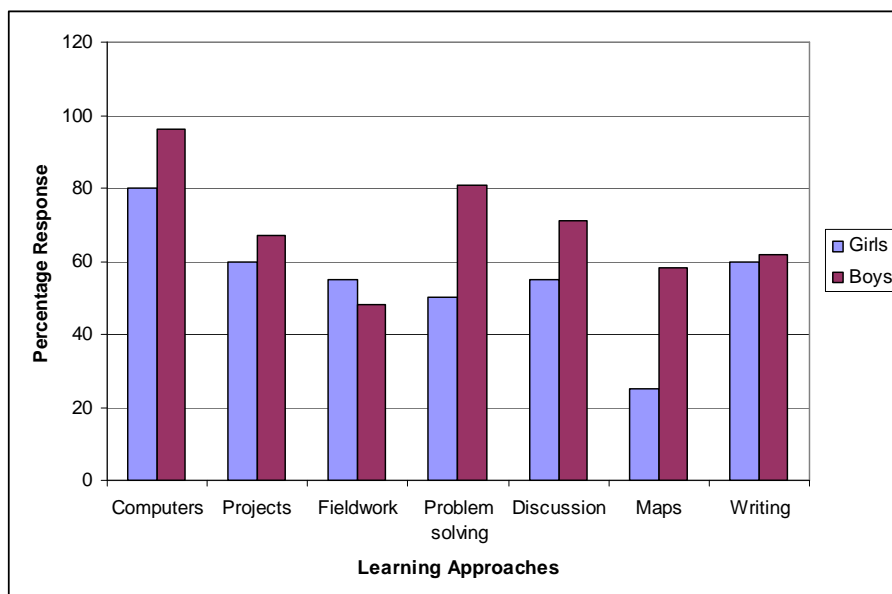


Figure 4.8 Summary of level of confidence in learning approaches in Year 11

4.1.4 Analysis of student learning patterns in geography

There are a number of differences in the data concerning learning, both by sex and ability. However, there are a number of consistent patterns which emerge from this baseline data. There is an obvious preference across the student body for the inclusion of active learning approaches. This spans all abilities and both sexes, and is characterized by a strong preference for the use of ICT and fieldwork especially. Project work, later identified as coursework by Year 11, is also identified as a preferred mode for learning. At the same time, writing is seen as unpopular across the year groups, and perhaps surprisingly, the most negative reaction comes from the more able students. These views, demonstrate a level of correlation with the intentions laid out by Milliband (2004), Hargreaves (2004 a,b) and Gilbert (2006) with regard to the development and practice of personalised learning. This includes a preference for a range of learning approaches, the use of new technologies, and

the potential for students to take ownership of their own learning, resulting in an active learning environment as outlined by Scardamalia and Bereiter (2006).

Confidence in learning mimics preferences in learning style, as might be expected. This is most likely the case due to the students seeing their preferences and confidence as two elements of the same issue. Additionally, boys do appear to be generally more confident than girls across the age, sex and ability ranges. The reasons for this are uncertain within the bounds of this study.

There is a lack of a single, clear determinate factor in the patterns found in the baseline data. Neither sex nor ability clearly stands apart as a predominant factor in student perceptions of their learning, and suggests that any attempt to single such factors out is to be simplistic in analysis. It appears that there are a number of complementary factors which lead to patterns in preferences and confidence, which whilst interesting in their own right are beyond the scope of the present study. However, the results from the baseline questionnaire focusing on learning preferences show a strong student voice demonstrating a clear belief in active learning, showing a desire among students to have the opportunity, at least some of the time, to actively find out things for themselves (see Stein, 2005).

4.2 Assessment

To gain a greater understanding of the perceptions of students relating to the assessment element of their geography experience, questionnaires were again used, this time focusing on issues of assessment in the classroom (Appendix 2). This was extended by a number of short interviews to supplement the results found in the questionnaires.

4.2.1 Year 7

Taking Year 7 students as a whole cohort, there is a general level of similarity in many of the views concerning assessment. When considering student preference in styles of assessment, there is a correlation coefficient of 0.896. Figure 4.9 shows some of the preferred styles of assessment as identified by Year 7. Group activities are highlighted as the most popular, including the completion of fieldtrips, followed by presentations. Exams are disliked as a mode of assessment by both sexes. Differences occur with oral presentations being more popular among boys (20%), less so among girls (6%), whereas essays are more popular with girls (24% compared with boys, 9%).

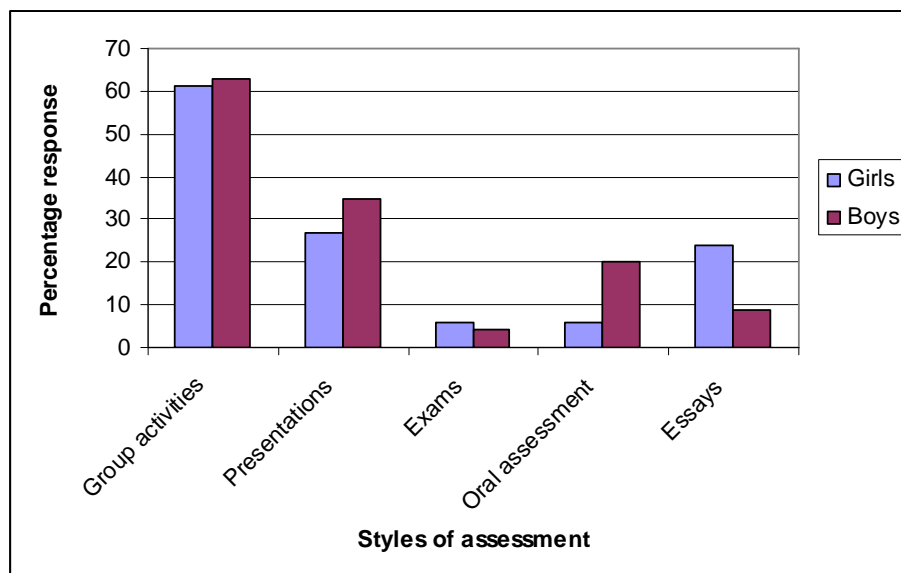


Figure 4.9 Assessment type preferences for the whole Year 7 cohort

This general pattern was supported by interview responses. Boys enjoyed fieldtrip exercises, especially the elements where they could work together, whilst the girls identified a radio

interview exercise where students had worked in small groups to create a recorded interview. An added element which was highlighted in this particular case is the attraction of not having to complete a formal writing element within the piece of work. This preference for assessment types mirrors the learning preferences identified by students.

When ability is taken into account, the pattern of correlation is less clear. Table 4.10 suggests that for the more and less able, there is a strong correlation by sex, although mid ability boys seem to have a greater level of similarity with their more able peers than with girls of the same ability.

By ability	Correlation of Percentages agreeing to statement
Green boys vs green girls	0.822
Blue boys vs blue girls	0.582
Red boys vs red girls	0.955
By gender	Correlation of Percentages agreeing to statement
Boys	
Green vs blue	0.501
Green vs red	0.889
Blue vs red	0.563
Girls	
Green vs blue	0.581
Green vs red	0.536
Blue vs red	0.684

Table 4.10 Correlation of preferences of assessment types
by sex and ability, Year 7

All groups show a preference for group work, but there are some differences shown between ability groupings. Oral assessment is particularly emphasized by the less able, and this is supported by a comment made by a female student from this ability band who gave the lack of writing as a main reason for preferring this style of assessment. In the interview

less able boys also suggested that they liked any work or assessment which is carried out on computers, especially where electronic writing frames are available. Finally, high ability girls suggested that they preferred assessments when they did not know they were being assessed as this led to less pressure and stress.

When asking students which types of feedback they prefer, there was again a strong correlation between the sexes as an overall cohort, of 0.916. Figure 4.10 shows the pattern of preferences. Girls have a stronger view concerning the style of feedback they prefer, although the general patterns are similar. It is obvious that for many students it is a grade, or to a lesser extent, a mark, which is important to them. However, comments are important, as are targets. Interview data generally supports this pattern. Both boys and girls stated that they first look at the mark/grade to see what they have got as this is most important to them. The girls however, are more likely to engage with the comments focusing on how work might be developed and improved.

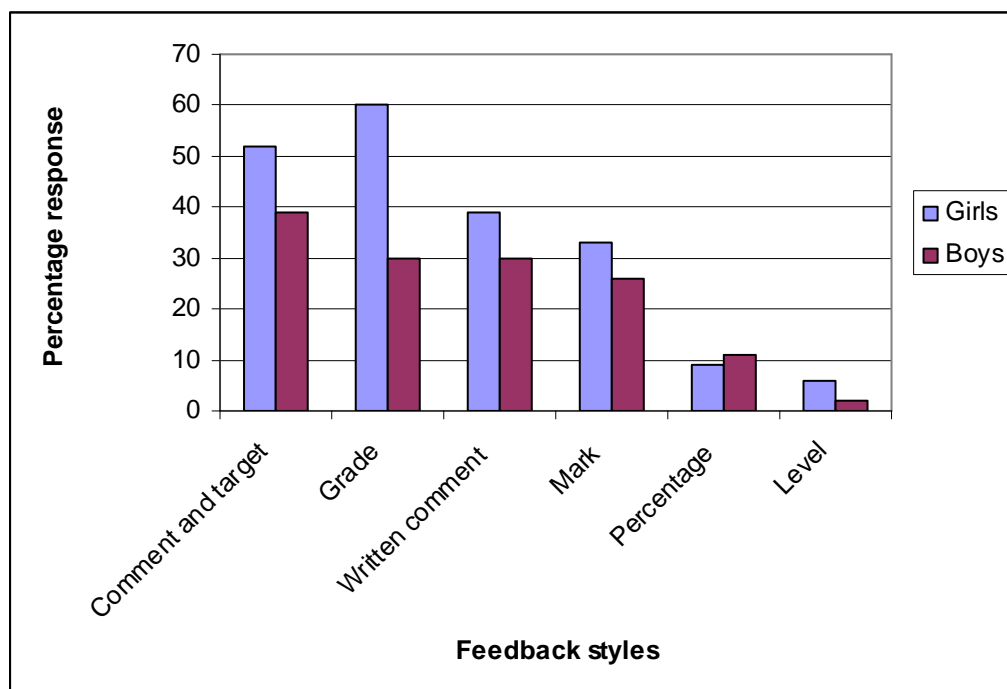


Figure 4.10 Feedback preference for Year 7 by sex

Once again, the pattern with respect to sex and ability is unclear, with no single, clear pattern (Table 4.11). The high ability students of both sexes appear to have a distinct and unified perception of feedback, but beyond this correlations are weak and suggest a variety of views both by ability and by sex.

By ability	Correlation of Percentages agreeing to statement
Green boys vs green girls	0.661
Blue boys vs blue girls	0.526
Red boys vs red girls	0.959
By gender	Correlation of Percentages agreeing to statement
Boys	
Green vs blue	0.424
Green vs red	0.685
Blue vs red	0.848
Girls	
Green vs blue	0.543
Green vs red	0.764
Blue vs red	0.556

Table 4.11 Correlation of preferences of feedback types

by sex and ability, Year 7

The less able (green) students highlight marks, grades and written comments, whilst the mid-ability students (blue) show low preferences across the styles, with the exception of grades, which the mid ability girls highlight as being important to them. The high ability appear to prefer comments and grades, along with the less able.

Finally, students were asked to consider their perceptions concerning the concept of 'assessment' and how assessments made them feel. The whole cohort shows a lower correlation between sexes than for the issues of preferred style of assessment and feedback preferences. Here, it was 0.709. There is some agreement between the sexes (Figure 4.11),

for example, between 30% and 40% of both sexes believe assessments make them think, help them understand and learn, and they also identify the challenge involved, although it is unclear whether this is perceived as a good or bad thing! Both sexes do appear to agree that there are too many assessments, but fewer of the girls either hate them or think they add pressure in work, whereas boys identify both of these negative perceptions of assessment at a higher level (between 40-50%). An interesting observation is that few students see assessments as helping them develop future learning.

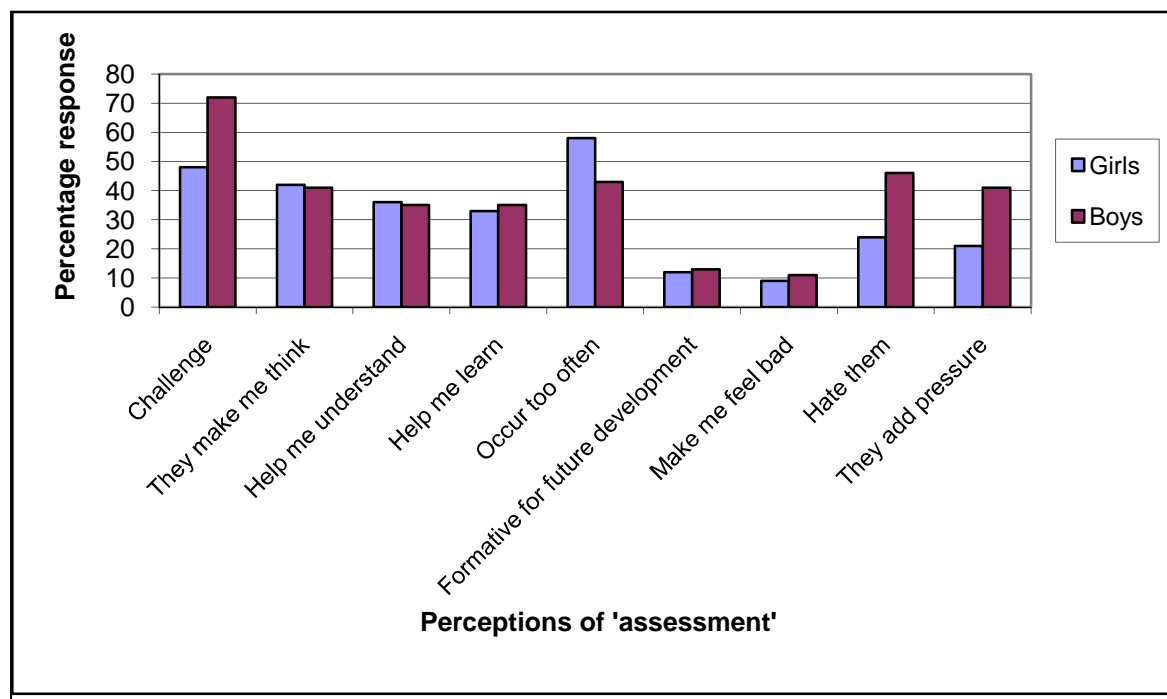


Figure 4.11 Perceptions of assessment in Year 7 by sex

When considered by sex and ability, again there is a relatively complex pattern of correlation (Table 4.12). There appears to be a higher, but still weak, correlation between girls and boys in the same ability groupings, except for the lower ability students, suggesting that ability is a stronger determinate than sex in terms of perceptions of assessment.

By ability	Correlation of Percentages agreeing to statement
Green boys vs green girls	0.177
Blue boys vs blue girls	0.757
Red boys vs red girls	0.619
By gender	Correlation of Percentages agreeing to statement
Boys	
Green vs blue	0.303
Green vs red	0.314
Blue vs red	0.202
Girls	
Green vs blue	0.574
Green vs red	-0.113
Blue vs red	0.129

Table 4.12 Correlation of perceptions of assessment
by sex and ability, Year 7

There were clear patterns in the data for perceptions of assessment. One exception which does appear from the data however, is the generally negative perception from the more able (red) students, who see assessments as a challenge, but who also feel that they happen too often, and that they add pressure.

Where the less able (green) students show a high level of response is in statements such as helping them understand their work, making them think, and to a lesser extent, giving them clear formative information for future development. In this respect, the less able appear to be more positive about assessment as an activity than their more able peers. This is not wholly reflected in comments from interviewees, where low and mid ability boys and girls identify assessments as being boring, but liking the opportunity to complete assessments in different formats, and even the focus of the assessments is mentioned,

'they are interesting 'cause they aren't always a summary of what we have already covered'

(mid-ability Year 7 boy)

In the interviews, students were asked how they would change and improve assessments in Geography given the chance. The boys highlighted greater use of ICT, one student referring to the fact that it led to the presentation of his work being better. A specific element of this development was identified as being the use of Power-point. The mid and low ability boys felt that less writing would be a positive development, especially a decreased reliance on essays and other forms of extended writing. Finally, they suggested the use of practical assessments, particularly a greater use of fieldwork, on the condition it was not a requirement to write it up when they had finished. The girls also highlighted a greater use of ICT, as well as a greater level of choice in format. One mid ability student highlighted the fact that there are different levels of ability in each class and that this should be the basis for introducing a greater level of 'personalisation' in assessment opportunities. Finally, both mid and high ability girls felt that assessments both challenged and pushed them too much, and less pressure to succeed should be put on them.

4.2.2 Year 9

Taking Year 9 students as a whole cohort, there is, as with Year 7, a general level of similarity in many of the views concerning assessment. When considering student preference in styles of assessment, there is a correlation coefficient of 0.881. Figure 4.12 shows some of the preferred styles of assessment as identified by Year 7. Group activities are highlighted as the most popular, including the completion of fieldtrips, followed by

presentations. This is a very similar pattern to Year 7, although in the case of Year 9, the girls are very positive about presentations as a style of assessment, more so than their Year 7 counterparts. Exams are again unpopular, and essays continue to be so with boys (14%), and again the percentage of girls identifying this mode of assessment is higher (23%).

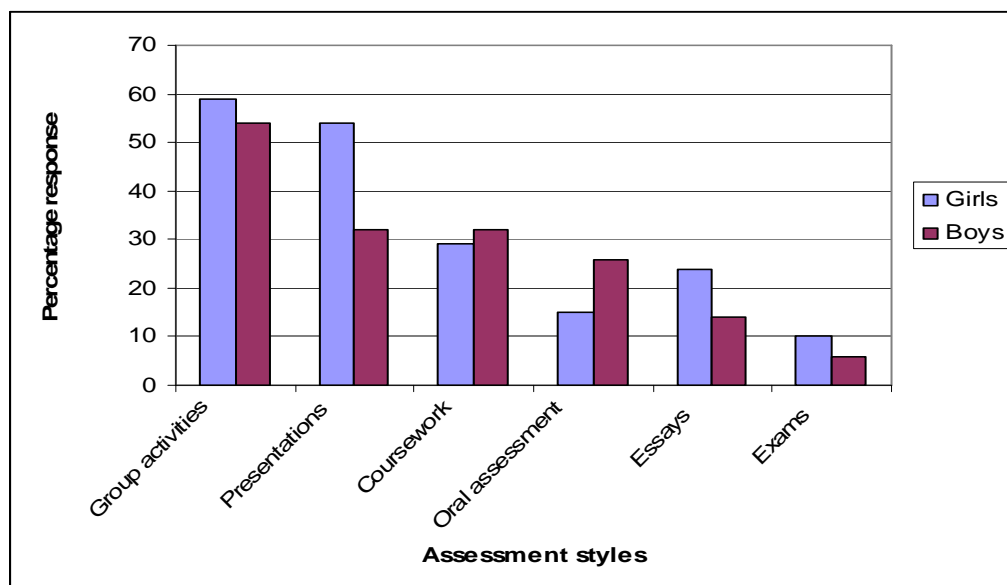


Figure 4.12 Assessment style preferences for the whole Year 9 cohort

This general pattern was supported by interview responses, and again shows some similarities to the responses from Year 7. Boys enjoyed fieldtrip exercises, especially the elements where they could work together. ICT is also mentioned, as is project work, where it is completed through the use of internet research. The girls also highlighted projects, mid and high ability girls stating that they like projects which ask them to summarise and evaluate an area of work, including the use of graphs and images. In general, the responses from both sexes were focused on active, independent pieces of work, especially where ICT might be an element of the process.

When ability is taken into account, the pattern of correlation is less clear. Table 4.13 suggests that for the mid ability, there is a greater correlation across sexes than within sex, and by ability, although beyond this levels of correlation of views is lower by both sex and ability.

By ability	Correlation of Percentages agreeing to statement
Green boys vs green girls	0.642
Blue boys vs blue girls	0.943
Red boys vs red girls	0.788
By gender	Correlation of Percentages agreeing to statement
Boys	
Green vs blue	0.522
Green vs red	0.663
Blue vs red	0.686
Girls	
Green vs blue	0.346
Green vs red	0.700
Blue vs red	0.740

Table 4.13 Correlation of preferences of assessment types
by sex and ability, Year 9

All groups by sex and ability show a preference for group work, and to a lesser extent both presentations and coursework also, although both mid ability boys and girls have a markedly lower preference for coursework. As with Year 7 essays and exams are less popular with all groups. Other than these differences, there is no simple pattern to the data, but in general terms there is an obvious preference for active assessment across the cohort.

When asking students which types of feedback they prefer, there was again a strong correlation between the sexes as an overall cohort, of 0.955. Figure 4.13 shows the pattern of preferences. Unlike Year 7 students, there is a clear preference for grades as the most important element of feedback. This is supported by a lower interest in both comments and targets, but whereas these are still important elements of feedback to students, the grade has become the central point of feedback. This is supported by comments made in Year 9 interviews. Boys do consider their use of comments, but these are mostly from high and middle ability students. All state that they look at their mark first, and several students stated that if the mark is good they might not look at the comments which accompany them. The girls also state that the mark or grade is the first thing they will look at, but unlike the boys, they state that they will always look at comments which accompany the mark or grade.

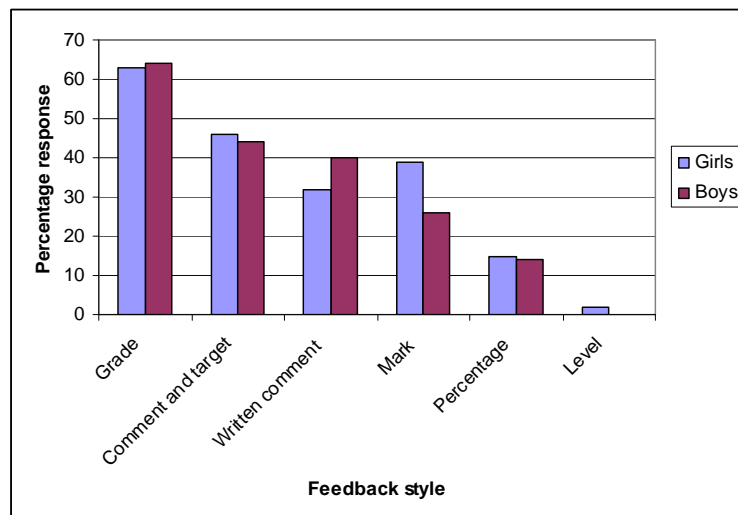


Figure 4.13 Feedback preference for Year 9 by sex

The pattern of feedback preferences with respect to sex and ability shows a far closer level of correlation than was present for Year 7 (Table 4.14). Neither ability nor sex appear to be more important in identifying any patterns between groups.

By ability	Correlation of Percentages agreeing to statement
Green boys vs green girls	0.829
Blue boys vs blue girls	0.860
Red boys vs red girls	0.865
By gender	Correlation of Percentages agreeing to statement
Boys	
Green vs blue	0.895
Green vs red	0.828
Blue vs red	0.885
Girls	
Green vs blue	0.687
Green vs red	0.657
Blue vs red	0.861

Table 4.14 Correlation of preferences of feedback types
by sex and ability, Year 9

All cohorts of students identify grades as important, whilst the less able also highlight comments and targets as important to them. Interestingly, there is less identification of formative feedback by the more able who seem to see grades as the most important aspect of feedback.

Finally, students were asked to consider their perceptions concerning the concept of 'assessment' and how assessments made them feel. The whole cohort shows a lower correlation between sexes than for the issues of preferred style of assessment and feedback preferences. Here, it was 0.756. There is some agreement between the sexes when taking the cohort as a whole (Figure 4.14). The three main descriptors which are identified by Year

9 are that assessments stress them (girls 54%, boys 46%), they add pressure to their learning (girls 44%, boys 48%), and they occur too often (girls 44%, boys 46%). This appears to show a generally negative view of assessments when compared to Year 7.

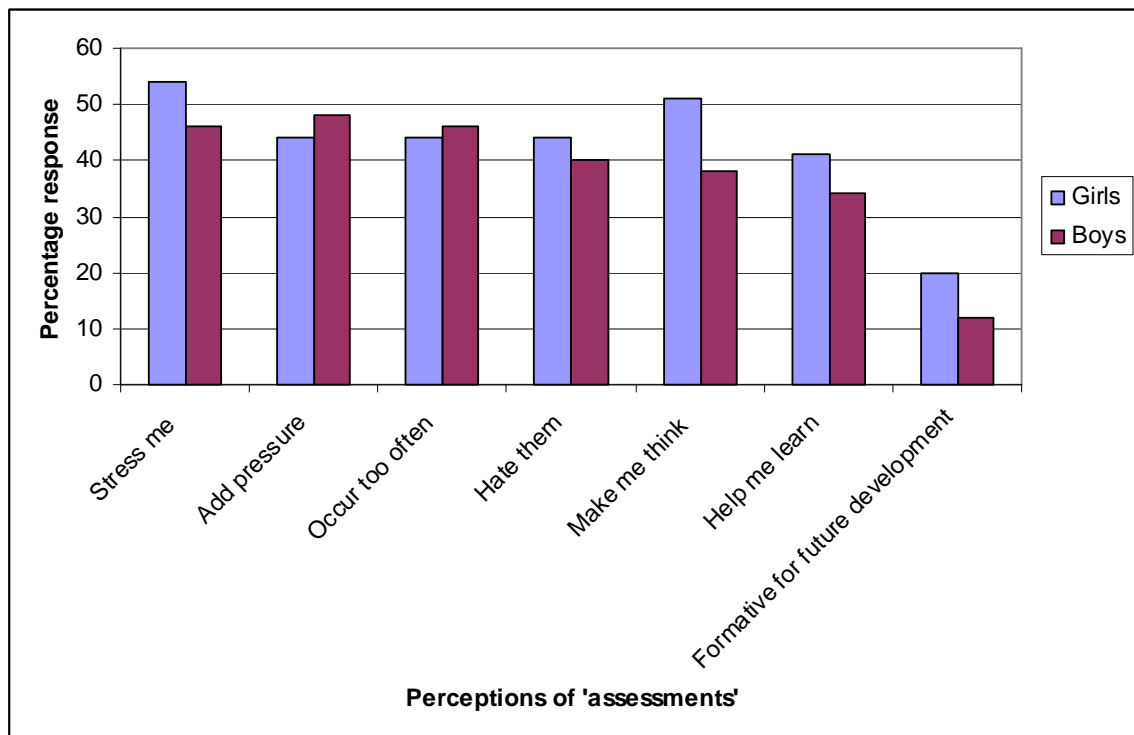


Figure 4.14 Perceptions of assessment in Year 9 by sex

When considered by sex and ability, again there is a relatively complex pattern of correlation (Table 4.15). There appears to be a higher correlation between girls and boys in the same ability groupings, except for the lower ability students, suggesting that ability is a stronger determinant than sex in terms of perceptions of assessment, although there is a stronger correlation between boys of different abilities than girls.

By ability	Correlation of Percentages agreeing to statement
Green boys vs green girls	-0.188
Blue boys vs blue girls	0.775
Red boys vs red girls	0.707
By gender	Correlation of Percentages agreeing to statement
Boys	
Green vs blue	0.807
Green vs red	0.741
Blue vs red	0.549
Girls	
Green vs blue	0.360
Green vs red	-0.067
Blue vs red	0.214

Table 4.15 Correlation of perceptions of assessment
by sex and ability, Year 9

There are no obvious overarching patterns when comparing the different ability levels.

There are both positive and negative issues pointed out by students. For example, the lower and mid ability students (of both sexes) are more likely to state that they hate assessments, but on the whole they also make them think. High ability girls in particular state they find assessments stressful (71%), whereas their male peers are far less stressed (31%). A significant finding is the lack of a perception of assessment as informing future development (an average of 16.5% across the whole cohort).

The interviews carried out with a cross-section of students shows an equally complex set of opinions. The low and mid ability boys stated that they felt that assessments in geography 'get your mind to work', which was seen as a positive characteristic of their work, with one high ability boy supporting this view by identifying projects as a really good form of assessment as they use all of the knowledge and understanding within an area of work

leading to better revision of the learning. However, mid ability girls stated that the assessments are boring as many of them are 'just writing'. However, the high ability girls argued that portfolio work is fun as it is more active, and is often focused to a particular audience, such as magazine articles or radio interviews. They also stated that there is an expectation that students will be independent and find their own information, something that does not occur elsewhere in the curriculum. This was seen as making the subject interesting and distinctive.

During the interviews, students were also asked how assessments could be changed and improved. Here, the use of ICT was highlighted, with students suggesting that more internet based assessment, as well as ICT supported presentations, be used. Perhaps the most consistent reflection was the desire by students to see a greater choice in formats, and hence a greater variety in the modes of assessment.

4.2.3 Year 11

The views of Year 11 students could not be analyzed by ability as the groups are mixed-ability. Analysing responses in terms of sex, there is a strong correlation (0.947) between boys and girls with regards to preference of assessment format (Figure 4.15). There is an obvious difference in the preferences of Year 11 when compared with Years 7 and 9 which may well be the result of the focused assessment regime which underlies GCSE. Students of both sexes identify coursework as their preferred assessment style. Group activities are still identified by a minority of students, and as before essays are still preferred by only a very small percentage of students. There is an interesting difference in the percentages preferring

examinations (boys – 16%, girls – 6%). Whilst neither sex shows a preference for this style of assessment, there is a considerably larger minority of boys when compared to girls.

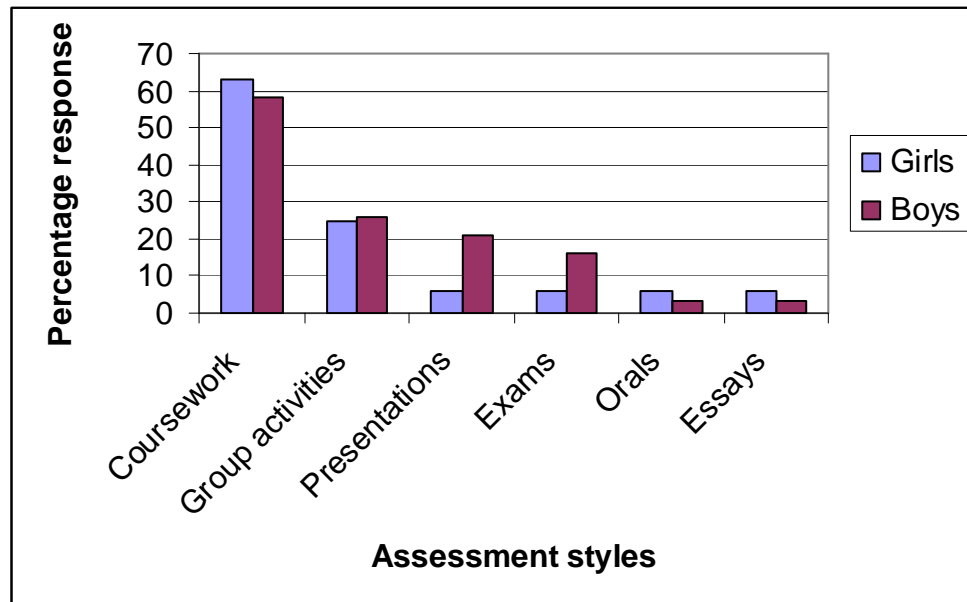


Figure 4.15 Assessment style preferences for Year 11

Of those who were interviewed, the boys appeared to prefer assessments where there were tighter controls, such as ‘any type of assessment where there is a set deadline’, and ‘exams where you have resources beforehand as you can focus more in terms of what you know’. The girls appear to prefer those assessment opportunities which are more open ended, such as ‘coursework, especially fieldwork with follow up projects. You can work by yourself in class’ and ‘any assessment that can be done over a number of lessons’. Hence, whilst both cohorts identified coursework as a preferred mode of assessment, there is nevertheless evidence that some boys, at least, like assessments which are more structured and time defined.

As with assessment preferences, there is an equally strong correlation (0.966) between the sexes when it comes to preferred feedback styles (Figure 4.16). Grades are the most often stated preferred format for feedback, perhaps reflecting the more focused interest students have leading towards terminal examinations. However, comments and targets are still seen as important by a majority of girls (56%) and a large minority of boys (42%). This is supported by interview evidence, where boys highlight the importance to them of grades, as do girls. There is an interesting element to feedback within the sexes which shows both similarities and differences in the way feedback information is used. One boy stated that 'if the grade is higher than expected don't read the comment' which is similar to a comment made by one of the girls who stated that 'the grade first, but where there is a good mark, I may not look at the comment'. In both cases there is a tendency to see the grades and comments in an instrumental way, with a personal belief as to what is an acceptable level of attainment, above which it is not necessary to go further. However, the preferred medium of feedback shows a greater level of difference. One boy, reflecting the opinions of the group, stated that 'verbal feedback is easier and better, takes less time and effort', whereas the girls were unanimous in believing that 'you forget verbal feedback – written comments are preferable as they are more personal to you'. This suggests that the boys are more willing to take a passive role in feedback as opposed to the girls who value the opportunity (on most occasions) to reflect and use written feedback actively.

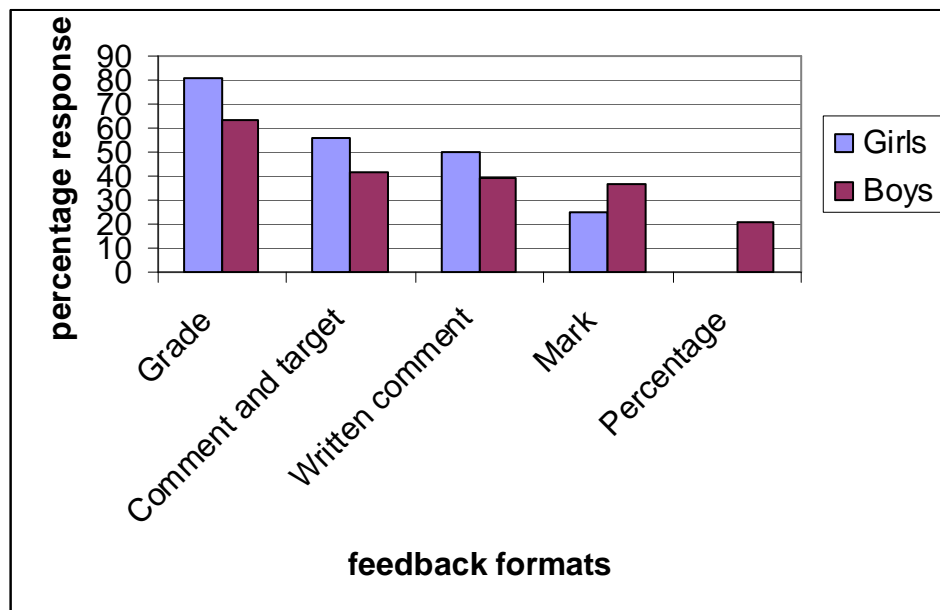


Figure 4.16 Feedback preference for Year 11 by sex

With respect to the views of students in terms of their perceptions of assessments (Figure 4.17), there is again a strong correlation (0.804) between the views of boys and girls, although slightly lower than for feedback and preferred assessment modes. As with the Year 9s, girls identify assessments as causing stress (69%) and pressure (63%), whilst also identifying their utility in making them think. Unlike the younger students, and possibly due to the focus on terminal examinations, the use of assessments for feedback (63%) is identified as important, although there are very few girls who see this feedback as leading to formative support for future development (6%). The boys reflect this pattern, with one major difference being that there is a far larger minority who see feedback as being formative and signposting future learning (26%).

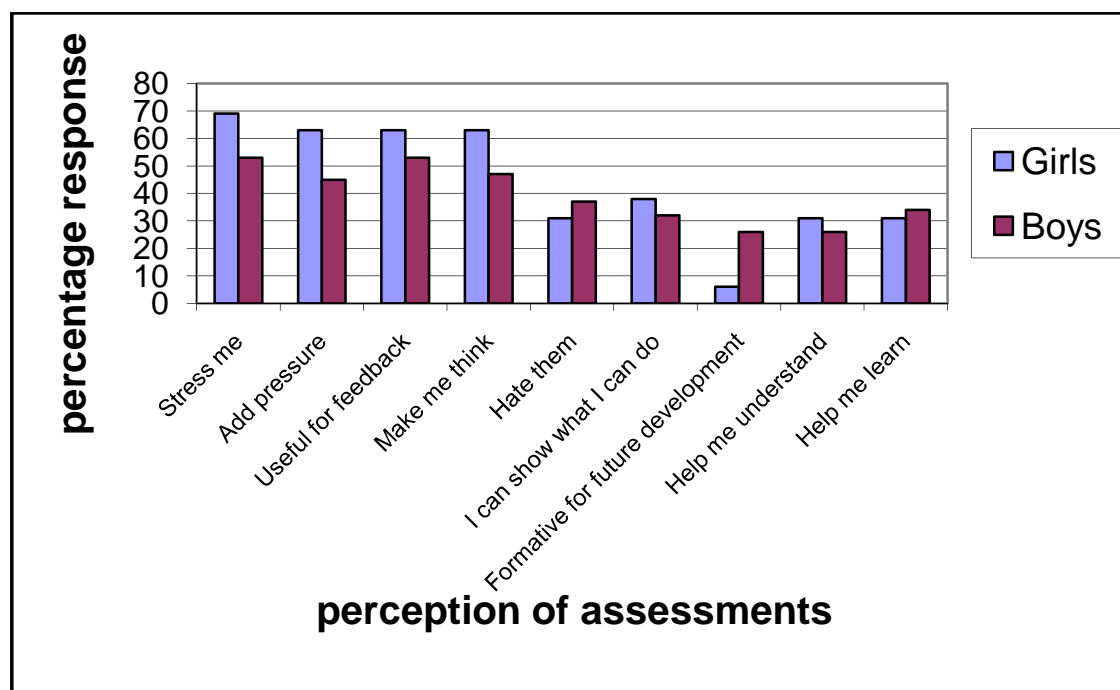


Figure 4.17 Perceptions of assessment in Year 11 by sex

When interviewing a group of Year 11s, boys felt examinations to be easier than coursework, and that the assessments are generally quite easy because they understand what they need to do, perhaps leading to the lower proportion of male students finding assessments stressful. The girls highlighted the variety of approaches used in lessons, but also reflected the stressful nature of examination work.

4.2.4 Discussion

The results from the baseline questionnaire focusing on assessment, demonstrates a number of clear patterns from student perceptions. In relation to the preferred format of assessments there is a clear and consistent pattern which spans across all three year groups. Group activities (including fieldwork) and presentations are popular in both years 7 and 9. In year 9 preferred assessments also highlight projects which are carried into year 11 in the

form of coursework. Evidence from the questionnaire and supporting interviews show a general preference for assessments which focus on independent and active approaches, especially where ICT plays a part. This triangulates well with the learning preferences identified by students, and again fits well with Milliband (2004), Hargreaves (2004 a,b) and Gilbert's (2006) views on personalised learning; it also carries through into interview data concerning students' views about the changes as they would like to see in assessment formats. Greater use of fieldwork together with a central role for the inclusion of ICT are seen by the students as a potentially positive change. In addition, a choice of formats in assessments is also seen in a positive light. Again, students view assessment as a process which should support a more active learning environment as outlined by Scardamalia and Bereiter (2006) and Stein (2005).

With regard to styles of feedback, grades and marks are consistently seen as the most important aspect of the information returned to the students. This pattern appears to increase in intensity as students progress through the school. However, both comments and targets are seen as important elements of feedback, although there is limited evidence (specifically in year 7) that girls are more likely to engage with comments than boys. It is also clear that students do not believe that feedback focuses on the formative development of their work, and may be partly responsible for a lower engagement with written comments (see Smith and Gorrard, 2005).

Finally, the views of students regarding assessment appear to become more negative as they move through the school. In year 7, students see assessments as a challenge and activities which make them think, the only major negative perception being that assessments occur too often. However by year 9 assessments are seen as not only

happening too often but also as activities which increase levels of stress and add pressure to the work completed by students. In year 11 once again stress and additional pressure are seen as central themes, although perhaps due to the proximity of external examinations, they are also seen as useful for feedback.

4.3 General discussion

The baseline data was invaluable in helping to understand a number of general issues relating to learning and assessment, which would form the basis for the development of a personalised learning environment in the subsequent research. All year groups demonstrated a consistent preference for active learning approaches and assessment (see Scardamalia and Bereiter (2006), and Stein (2005)) including the use of ICT, group work and fieldwork as well as project work/coursework (based in this case on the enquiry approach of Roberts (2006)). Such approaches appeared to be poorly embedded within the wider curriculum of the students involved, and therefore was to be a central element in devising and developing a personalised framework for their curriculum.

With respect to assessment, students demonstrated the key position that grades have in their learning, identifying these as central to feedback given by teachers. However, there was also a general agreement in the data that comments are important. In developing a personalised environment, a greater focus on comments was deemed extremely important, but would students accept this? Assessment was also increasingly seen in a negative light by the older students. This was in part seemingly a reaction to the growing pressure that students perceived was being put on them to succeed, and also appears, from the lack of a

formative element to feedback, perhaps to be the result of a lack of obvious synergy between learning and assessment. Askew and Lodge (2000) offer a clear way forward in synthesising a formative, generative feedback dialogue which is only possible within a co-constructivist teaching model based on a view of learning and teaching similar to education as process/research as developed by Stenhouse (1975). Therefore, a number of researchers have developed theories and models which appear to support each other in both their philosophical and practical nature, and which offer a framework for bringing to fruition the views held by the students in the baseline study. The results from the baseline therefore demonstrate that the students would prefer to follow a course where there is the enshrining of active learning approaches which are supported by active assessment systems, resulting in a clear synergy between the two where the assessment supports developments in learning. However, to enable such a synergy, there needs to be a sympathetic curriculum, in this case present in the form of the Pilot GCSE. As such, the baseline results acted as an ideal launch point for the development of a personalised and active GCSE Geography course at the classroom level.

The major areas for development based upon the baseline study and its relation to relevant research (particularly Stenhouse (1975), Shephard (2000), Askew and Lodge (2001), Scardamalia & Bereiter (2006) and Stein (2005)) were:

- Curriculum:
 - Adoption of the Pilot GCSE as a facilitator for an 'emergent active pedagogy'
 - Increased level of student choice at GCSE level
- Learning:

- Development of a more active learning environment,
 - Greater use of ICT,
 - The development of independent learning,
 - Varied approaches to learning,
 - Greater use of fieldwork
 - Greater level of relevance to students' lives
- Assessment:
- A more formative and developmental approach to assessment
 - Greater choice of assessment formats where possible
 - Greater synergy between learning and assessment (potentially moving to the idea of assessment **as** learning (see Dann, 2002)

4.4 Action Research - Cycle 1

4.4.1 Introduction

The baseline study on learning and assessment preferences clearly showed that students preferred active learning activities, and especially enjoyed ICT based activities. This view extended to assessment, where ICT and group based assessments were deemed preferable but were underdeveloped. The first action research Cycle had been planned to begin in September 2005, with the development of an enriched pedagogical model based on the

data gained at the baseline. However, it was decided to take the opportunity of a small scale preliminary test which would give some feedback in developing active approaches for the main action research Cycles.

4.4.2 Intervention

The resultant intervention centred around the development of an ICT based independent learning tool in the form of a small website which was uploaded to the school website so that students could access it from home. The website acted as the main point of contact for a series of activities which the students were asked to complete over a half-term holiday as homework. In the small number of cases where students had no internet access, CD-ROMs were created to allow local access.

The 'People as Consumers' section of the Pilot GCSE *'focuses attention on the impact that the processes of consumption has made and is making on our lives'* (OCR, 2004, p.29). Two elements of the unit focus on:

- What is a consumer landscape? Studied through two contrasting landscapes of consumption.
- What are my rights/responsibilities as a consumer? How might they promote a suitable future? Focusing on ethics of consumption and the consequences of consumer decisions.

The website was constructed to cover the above areas of the specification. This is shown in Figure 4.18, which outlines the three activities created to cover the specification elements. The overarching subject matter used to cover these elements was that of tourism, hence the introductory page of the website was entitled 'Consumerism – Tourism research'. This

page gave a short introduction to the task as a whole and on the left hand side of the screen offered a simple menu for each of the three activities which were to be completed. They were:

Activity 1- An introduction to tourism, focused on developing some general understanding of the tourist industry.

Activity 2 – An introduction to ecotourism based on a simple decision making exercise to develop an understanding of main issues.

Activity 3 – An activity which compares Chamonix, France with Namche Bazaar, Nepal as consumer landscapes.

The website was meant to introduce students to different types of holiday, highlight that different locations specialise in different types of holiday, and therefore attract different groups of customers. The activities were supported by a simple introduction to the impact that tourism might have on these places. From this, students would then go on to look at ecotourism through a decision making exercise to introduce ethical issues as they relate to tourism. The reasons for using a decision making exercise was to develop different approaches to the content, as opposed to a simple 'read and summarise' approach. By asking students to consider some 'evidence' in the context of a particular semi-fictitious case, it was hoped that they would show a greater degree of motivation for the exercise. Finally, Namche Bazaar (Nepal) and Chamonix (France) were used to develop an understanding of consumer landscapes, and the differences between such landscapes based on the types of people going to these different mountain based tourist centres, also focusing on the social, environmental and economic impacts tourism has on these locations.

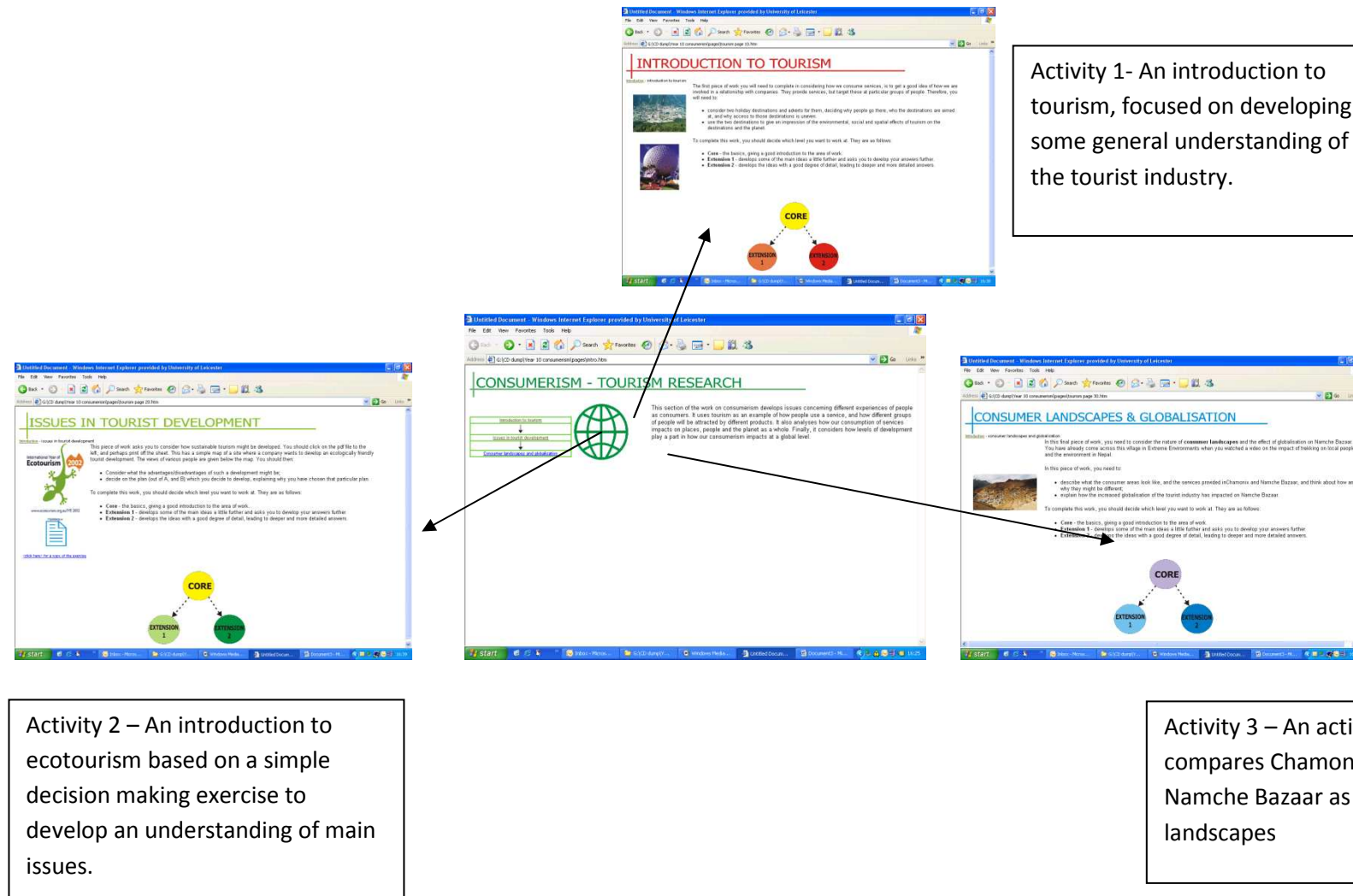


Figure 4.18 Outline of the elements of the website to be used by students (screen captures are for illustrative purposes only)

For each of the three exercises created, it was decided that it would be important to differentiate the materials so as to ensure that students would be able to access the materials and their own learning at an appropriate level. As a result, each exercise was differentiated to three levels, identified as 'Core', 'Extension 1', and 'Extension 2' (Figure 4.19). This led to a framework which was used across the three exercises. An example for the first introductory exercise was:

- **Core.** This level asked students to make some simple observations about the types of holidays offered in two tourist locations, Chamonix, and Florida, and the types of people who would visit them, in a descriptive form. This information would be found through the use of two websites listed on the page, hence students would follow hyperlinks to the information; there was no expectation that students would need to find their own websites for research. Having done this, students were then asked to list the positives and negatives that tourism might bring to the two locations. If unsure, an electronic writing frame was available for students to use to help them not only structure their responses, but also to give them an idea of how much information was needed.
- **Extension 1.** This level of work was similar to that in the Core. However, the questions asked were based on the students *explaining* rather than describing, and word limits were set as opposed to the use of an electronic writing frame as students were expected to frame their own answers. Hence, one question read:

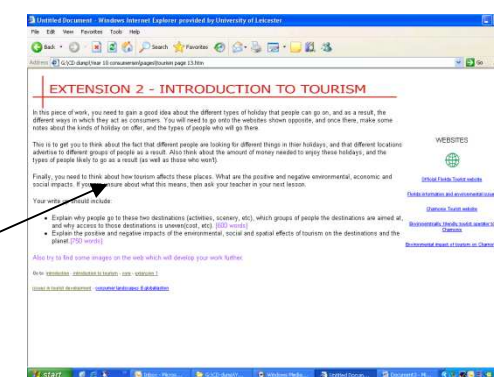
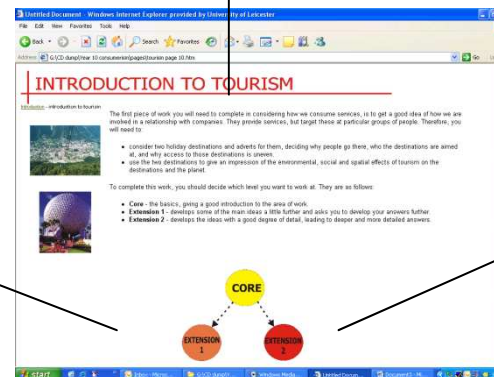
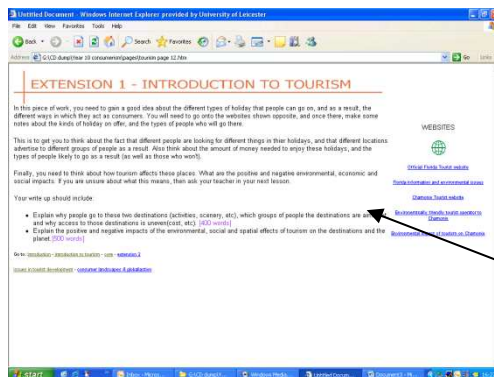
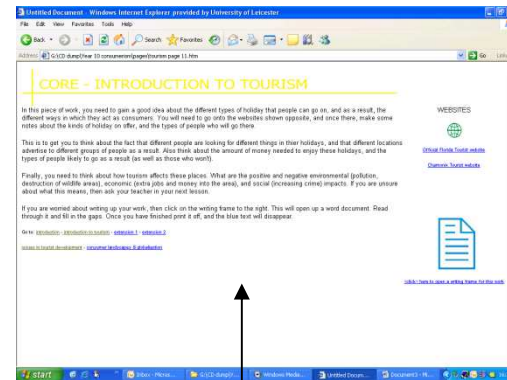
'Explain why people go to these two destinations (activities, scenery, etc), which groups of people the destinations are aimed at, and why access to those destinations is uneven (cost, etc) [400 words].'

The information for students to use was also extended. Whereas the 'Core' level had only given two websites to visit which were intended to lead to the answers given, at this level, five websites were given so that students would need to extend further the amount of research completed to help develop more detailed and critical answers.

- **Extension 2:** At this level, the same stepped principle applied as for the other two levels. The questions used were the same as for Extension 1, but the length of answers expected was greater. Also, as well as the same five websites in Extension 1, the students were expected to use the website to find some images to support their answers, but in this case, they were expected to find websites and images of their own rather than those supplied.

The same form of differentiation was used across all three exercises.

CORE – This is a window offering a simple set of tasks supported by websites and an electronic writing frame



EXTENSION 1 – This is a window offering longer tasks which are also based on explanation rather than description. There is no electronic writing frame for support, and there is a larger bank of websites to select information from than in the core.

EXTENSION 2 – This is a window offering longer tasks which are, like Extension 1, based on explanation rather than description. There is no electronic writing frame for support, and there is a larger bank of websites to select information from and an instruction to find images to support their work.

Figure 4.19: Outline of differentiation framework for tasks (screen captures are for illustrative purposes only)

4.4.3 Results

Once the exercise had been completed by students, they were asked to complete a questionnaire reflecting on their experiences. Figure 4.20 shows the results for the whole cohort of students. Of the questions asked there was only significant positive feedback in three areas. 67% of students agreed that the exercises furthered their ICT skills, with 53% agreeing that the answers they needed to find in response to the activities were easier to find through an ICT medium. Finally, 47% agreed that the three levels of differentiation were a positive element of the activities. Only 40% said that they enjoyed working through the internet, with 34% disagreeing with this statement. Other perceptions were markedly more negative, however. 60% of students disagreed that learning through this medium was easier than completing work in the classroom (only 21% felt it had been easier), whilst 66% disagreed that they were more motivated. As a result of these views 43% of students disagreed that they would like to do the same type of activity again in the future. Finally, two sets of results which showed no clear preference were those relating to accessibility and independence. 39% of students agreed that the activities made the material more accessible than classroom exercises, as opposed to 36% who did not, and 33% identified the extra independence of the activity as a positive, whilst 28% saw it as a negative.

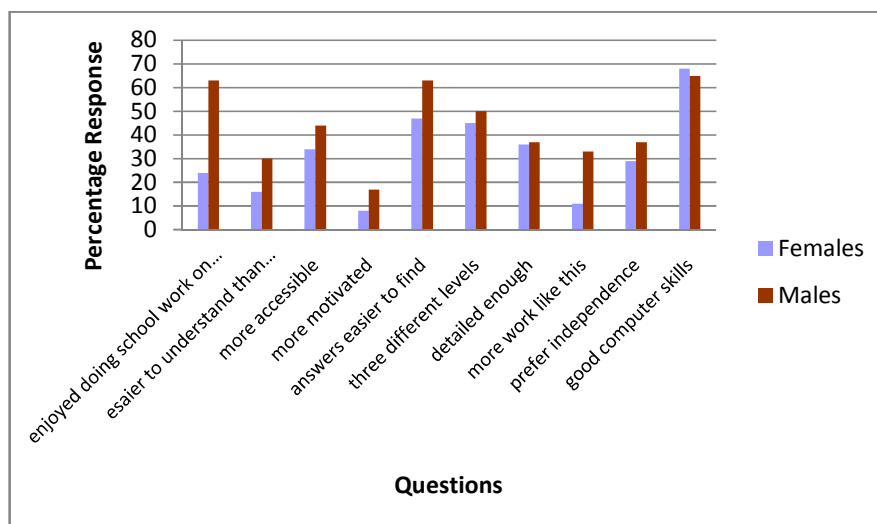


Figure 4.20: Results for all students reflecting on web based activities

The overall results from the questionnaire do hide some significant differences between the sexes (Figure 4.21). Neither sex agreed that they had been more motivated to complete the work (males 18%, females 9%) when compared to classroom activities. This is reflected in the negative female view of the possibility of further work using the same approach (10%). However, the proportion of males who would be willing to complete this form of work again, whilst still a minority, is much higher (33%). This might, in part, be due to the much greater proportion of males who enjoyed the opportunity to complete schoolwork through

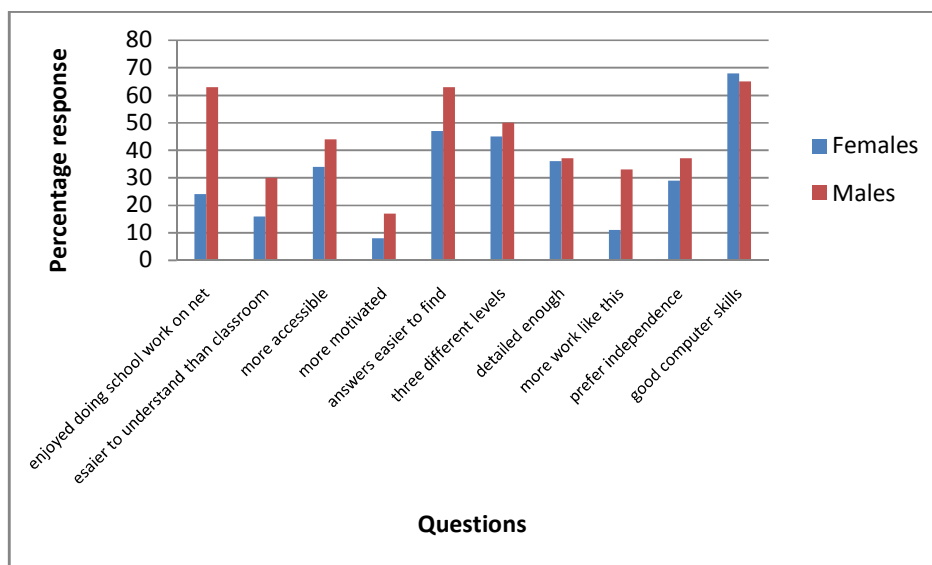


Figure 4.21: Percentage agreement by sex for questionnaire

the use of the internet (63%), much higher than for the females. Allied to this is a higher proportion of males who found the accessibility of the exercise better than normal classroom activities (45%). In both cases, this appears to be linked to the males finding the information required easier to find (63%) using the internet than when they are completing work in the classroom. Males show a more positive perception in all questions bar one when considering this exercise, showing that the exercise was more positively received by the males in general when compared with the females.

4.4.4 Discussion

Given the baseline results which informed the development of an alternative approach to learning, it was expected that the students would find this Pilot ICT activity a positive

experience. However, as the results show this is not wholly the case. There were some positive results. Firstly, a clear majority identified that they could develop their ICT skills through this form of activity, which demonstrates that there was a clear cross-curricular element to the exercise. A majority also felt that the answers they were required to develop were easier to find within the exercise than normal class work. This may well be due to the fact that direct links for the work were included as part of the website and this led to the students being able to focus on developing their answers rather than spending time trying to find information through the use of search engines. Students also liked the inclusion of clear levels of differentiation which allowed them to choose the level of difficulty in their work. Both of these results appear to be related to the perception amongst a marked minority of students that the work was more accessible than normal. This all suggests that the *interface* itself was generally well received, although there were specific sex related differences and negative perceptions.

Students as a whole cohort showed a relatively low percentage identifying their enjoyment in the use of the internet to complete school work, with only 40% agreeing to this. However, this hides a clear distinction between boys and girls. At 63%, the boys showed a far more positive response to working on the internet when compared with the girls, a result reflected in the ease with which the work was understood by the sexes. As a consequence, whilst the motivation of students to complete the tasks was generally quite low, this was more marked in girls. This gives the impression that in general the girls experience of the tasks was markedly less positive than that of the boys. This is again apparent in the proportion of students who found the independence of the task a negative.

When discussing the tasks with my own teaching group after they were complete, it became clearly apparent that the girls had indeed struggled with the exercise more than the boys. They stated that the main difficulty they had experienced was what they should do if they were unsure as to what a question required, or more importantly, if they were unsure whether their own responses were correct or not. The main factor within these perceptions of the task was the lack of a teacher to respond to their doubts and uncertainties directly and immediately. Because they had to work independently, with no guidance other than that supplied as part of the website, many girls had started to view the exercise in an increasingly negative light. This led to a fall off in motivation and the belief that the exercise was far more difficult than class work. The boys, conversely, stated during general discussion that they were happy to 'have a go' at the work and found the interface a positive experience. However, they felt that having to complete the exercises for homework was less of a positive element of the work, and that the use of lesson time would have been better.

Hence, the negative perceptions of the students seem to be clearly explained. The girls appear to have found the experience a negative one, less because it was computer mediated, but because they had little, or no, recourse to a teacher to support them in their work. They expressed a desire for the presence of a teacher to allow them to frequently check that they had understood the tasks properly and also to check that responses were both detailed enough and correct. Without this 'safety blanket' they appear to have become increasingly anxious about the work and as a consequence did not enjoy the exercise. The boys were also negative about elements of the exercise. However, the reasons for this were quite different. They enjoyed the interface, and seemed to accept the level of independence more readily. They

appeared to be far less anxious about the level to which they were answering the tasks and whether they were correct or not. However, they appear to have been less motivated due to the work needing to be carried out over the holiday. In discussion with my group, they were positive about using a website interface for learning, but showed a strong preference for this taking place in lessons as they felt it impinged on their own time completing the exercises over the holiday period. The results demonstrate that there can be pitfalls in the use of e-learning media, as potential benefits are often considered without equal consideration of the potential pitfalls (see Haythornthwaite, 2009).

4.4.5 Conclusions

The opportunity to develop a small 'Pilot action Cycle' centred on developing ICT based learning was invaluable in creating a first full scale personalised learning platform for the first main action research Cycle. The students appear to have found some of the elements of the exercise very positive. They continued to show an interest in developing ICT skills, something the baseline analysis had demonstrated. There was also some positive feedback concerning the use of identified resources, rather than being left to research on the internet with little focus, and the use of a purposefully differentiated platform was generally well received. However, the main concerns appear to relate to the 'environment' in which the learning takes place.

Hargreaves (2005) believes in a number of advantages to using ICT in the classroom, but its use beyond seems less secure, certainly in this particular case. The girls appeared to be unready to take full independent responsibility for their work, instead desiring a level of immediate

support if required. The boys on the other hand were apparently potentially more motivated if the exercises were to be completed in 'school' time rather than their own.

These results were important as they helped to inform the development of subsequent ICT based activities being planned for the new academic year. Taking the results of this Pilot exercise, and adding them to the results of the baseline data collection across the school, certain foci became apparent in developing the learning environment for the Pilot GCSE. Using Stenhouse (1975) and Shepard's (2000) models of curriculum, assessment and learning, the main foci for development became:

Curriculum

Set by the awarding body, it was decided that:

- *Year 1 (Core)*: The students would complete the core units as set out in the specification.
- *Year 2 (options)*: Students would be given a choice of units to follow in completing portfolio work for their final assessment. In the first half of the year they would follow either coasts or fieldwork, whilst in the second part of the year they would follow either cultural geography or travel and tourism. This was chosen to ensure that there would be elements of both physical and human geography in student experience in the second half of their course.
-

Learning

Baseline results, and the outcome of Cycle 1, focusing on the interactive use of ICT, were considered to develop a learning intervention which focuses on:

- *Year 1 (Core)*: The development of a scheme of work which had a consistent ICT component developed alongside an active approach to learning, especially in relation to group work, fieldwork, and the development of an independent learning strand. There was also a focus on developing a degree of choice in approaches to aid greater personalisation.
- *Year 2 (options)*: The development of this strand in terms of learning required a new medium for teaching lessons, due in part as a result of allowing students to follow more than one option. This led to the adoption of the use of ICT, and greater independent learning to allow students to follow their work at a rate and level most appropriate to them. There was also the inclusion of fieldwork to ensure a wider range of active learning approaches.

Assessment

The baseline analysis had demonstrated that students felt that formative assessment focused little on developing learning. With this in mind, initial developments were to focus on:

- *Year 1 (Core)*: Formative assessment would be clearly embedded within the work of students, with comment only marking, together with use of the portfolio style

assessment elements of the Pilot GCSE to allow the broadening of learning and assessment activities.

- *Year 2 (options)*: As with the Year 1 group, formative assessment would be clearly embedded within the work of students to focus on the improvement and development of work. The more flexible assessment framework for the optional units was also taken as a starting point for enriching the learning and assessment activities used during the course.

4.5 Cycle 2 – First Full Intervention Cycle

4.5.1 Introduction

Cycle 2 started in September 2005, running until January 2006. As highlighted at the end of Cycle 1, the main developmental interventions undertaken during this Cycle were:

Curriculum

- *Year 1 (Core)*: The students would complete the core units as set out in the specification.
- *Year 2 (options)*: Students would be given a choice of coasts or fieldwork as portfolio units

Assessment

- *Year 1 (Core)*: Greater use of developmental formative assessment, and varied authentic assessment.
- *Year 2 (options)*: Greater use of developmental formative assessment, and varied authentic assessment.

Learning

- *Year 1 (Core)*: Development of ICT inclusion, associated with active and independent learning, to give a greater level of personalization.
- *Year 2 (options)*: Development of ICT inclusion, associated with active and independent learning, to give a greater level of personalization.

These interventions were developed for use with two groups, both involved in a 'fast track' Humanities option block. For many years, the Humanities subjects have been set against each other in the GCSE option blocks within the study school. As a consequence, it has often been the case that Geography and History have been set against each other, with students interested in completing GCSE courses in both being unable to. This has led to relatively low numbers in both subjects. It was decided to Pilot a new course, called 'Red Humanities', the red referring to the high ability band at Key Stage 3. The resultant course starts in Year 9 where the Core element of the Pilot GCSE in Geography is completed at the same time as the History department starts their GCSE work, in each case having two 50 minute lessons per week. For those deciding not to continue with the course at the end of Year 9, it was possible to 'cash in'

their results for a half GCSE in Geography. If continuing into the second part of the course, Year 10 students would complete the second part of the Pilot Geography PGCE in this year, again through two 50 minute lessons per week. In Year 11, a greater proportion of the curriculum was given over to History, leading to one 50 minute lesson per week in Geography which was focused on completing Level 3 Key Skills qualifications in preparation for A-levels.

The high ability band in the school originally constituted the top 60 students from approximately 230 in the year group. This was the case with the Year 10 group involved in this research. However, the top ability band was expanded to twice its original size a year later, to therefore encompass 120 students. As a consequence, the Year 9 group involved in the research had a lower ability range (measured by expected grades) (Figure 4.22) than the Year 10 group.

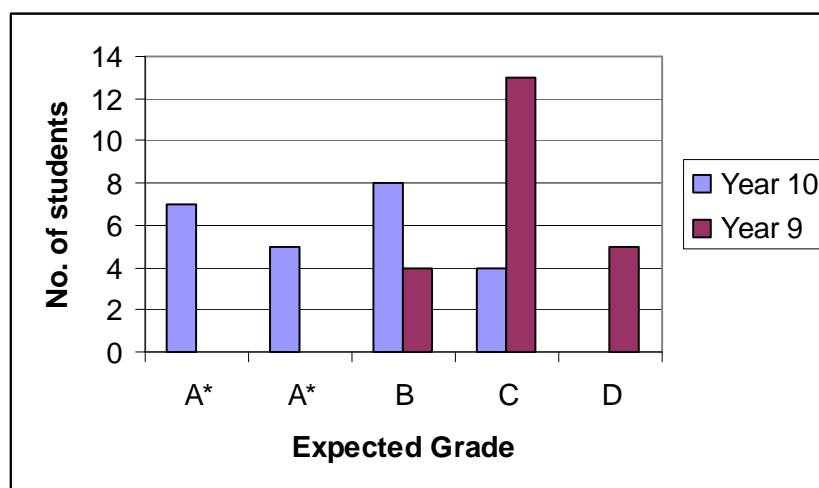


Figure 4.22 Expected grades for Year 9 and 10 groups based on Fisher Family Trust targets (package D)

4.5.2 Cycle 2 Intervention

The interventions undertaken in this Cycle were developed for both the Year 9 and Year 10 groups.

4.5.2.1 Year 9 Core Intervention

During this Cycle, students completed the 'My Place' unit (the scheme of work followed is given in Appendix 8), focusing on the processes and dynamics responsible for the nature and character of Pilotsville and its surrounding region. The main features which were developed for this area of the curriculum to allow the development of more active learning were a number of lesson sequences which allowed for the development of different skills and experiences. Having introduced the idea of 'place' as being more than just a location at the start of the scheme of work (Wood, 2009), the first substantial element was a group work exercise centred around the development of documents and a presentation for a fictional advertising agency (Appendix 9). Students were given some ideas as to the types of evidence they should consult, such as the National Statistics website, local business websites, and the district council website. Students then completed the work over four lessons using ICT and group work to complete work on the areas listed. As students completed the written elements of their work the outcomes were e-mailed to me as the teacher. In each case, feedback was given on the work completed, with comments which not only highlighted any inaccuracies but also contained questions and comments designed to stretch students and to develop their ideas further. Importantly, the students had only a single deadline for the three elements of their work, but were told that elements could be handed in prior to that, and feedback would be given rapidly. This offered

the opportunity for students to hand in some of their work early, gaining formative comments to inform and extend their remaining work if they so wished.

Having completed the advertising exercise, gaining a clear, basic knowledge and understanding of their local area, they were then introduced to a piece of work which would become part of a portfolio used as an element of the Core assessment regime. This work focused on students keeping a personal diary over a two week period, one of which was to be in term time, the other over half term. This work was developed to aid students in considering how they use their local area, both when time is restricted, such as in term time, and then when they have a greater level of freedom during the holiday. Students were allowed to complete their report in any suitable medium including the production of a website, or through a number of Power-point slides.

The final element of the scheme of work was the development of a comparative thread which ran throughout the unit. Having gained a clear understanding of how a place can be characterised in both qualitative and quantitative terms early in the unit, Pilotsville was then compared quantitatively with Tower Hamlets through the use of National Statistics data. Later in the unit students were then taken on a fieldtrip to Hunstanton where they carried out a number of exercises, some of which were intended to help them develop their knowledge and understanding of the place and its qualitative characteristics. Using these two exercises, the final piece of work the students were asked to complete in the unit was to demonstrate how places can be compared both quantitatively and qualitatively before using the answers to these issues to define the term 'place' itself.

Throughout this unit of work ICT was used to support active learning which was developed through the use of project work, group work and fieldwork. To support this learning some work was collected for assessment as a group, but there were also occasions when students handed in work at points in their studies which were most convenient for them. Students were also given the option to hand in work by e-mail rather than physically and assessed work was returned with a focus on comments which both highlighted and explained concepts and issues, but which also highlighted how work could be improved and corrected.

4.5.2.2 Year 10 options intervention

During this Cycle Year 10 students had a choice of completing an optional unit on either coasts or fieldwork leading to the development of student choice and voice. Enabling two options to run at the same time led to the need to develop a classroom approach which would allow both sets of students to work efficiently, whilst also needing to work with separate option cohorts when introducing elements of the units. Copies of the schemes of work for coasts and fieldwork are given in Appendix 10 and 11.

Coasts

The coasts unit focuses on several elements of coastal environments:

- coastal processes
- coastal landforms

- how people use the coast and what conflicts occur
- issues of coastal processes in conflict with coastal users and the potential solutions.

The main portfolio piece was designed to bring many of these components together to create a brochure/catalogue for a photographic exhibition in an art gallery based on images given to the students (Appendix 12).

Before starting this main piece students were given groups of images and some basic information, including references to textbooks. With these they were asked to demonstrate an understanding of coastal processes and landforms which would then feed into their art gallery pieces. To support this research students were given a copy of a 'textbook' which I had written for each of the options taken by the students. The intention of these textbooks was not to offer only information, but to act as a way of getting students to think further about the work they were undertaking (Appendix 13). Therefore, basic information was given together with some simple case studies, but this was augmented by the use of questions which students could attempt to answer, scrolls with hints about the types of notes which would help with the completion of portfolio work and thought bubbles to focus students on thinking about issues.

As students completed pieces of work which acted as the foundation for their portfolio work, they could either e-mail or hand in a physical copy of their work which would then be marked and fed back to help develop their understanding further.

Before starting their portfolio work students were also given the opportunity to visit the coastline. A fieldtrip was organised to visit Skegness and other coastal locations, as far north as

Mablethorpe. The trip was a joint trip with the fieldwork option students. The coastal students were asked to collect photographs of the coastal area as well as discussing the landforms and processes they could see with their teachers. They were also asked to consider how the coast was being used by people and the potential conflicts which they thought were apparent. On returning to school, all the photos which had been taken by the students were edited and some were included within the virtual gallery which was developed as the location for which the catalogue was being developed.

The virtual gallery took the form of a simple website which was specifically written for the portfolio piece and was published on the school website so that it could be accessed outside of lesson time, if desired. It consisted of four pages produced as gallery room mock-ups (Figure 4.23). The reception desk computer screen could be opened up to gain a copy of the portfolio outline whilst each of the galleries contained the images for which 'blurbs' had to be written. In the case of the Lincolnshire gallery, two images were replaced by question marks. When these were opened a gallery of 12 images taken by students were presented so that they could choose their own images to include in their catalogues.

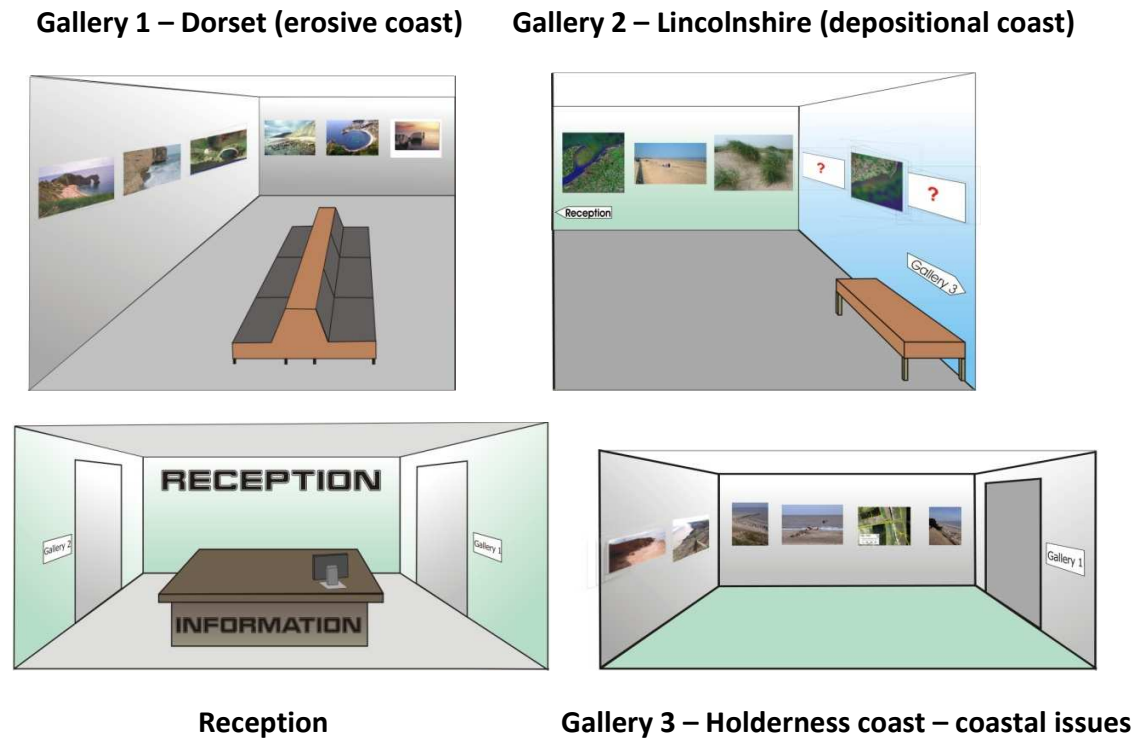


Figure 4.23 Screen shots of the coasts gallery website

Students were told that as they completed elements of their catalogue they could e-mail **one** draft for comment. However, once a section had been seen and fed back, no more help would be given. This resulted in students having a decision to make about the stage at which they would seek feedback and guidance. This system also meant that there were no designated hand in dates for draft work, only a final deadline for the finished catalogue. Comments were partly included to help develop work, but as often as possible, this was done in the form of questions to help students focus on ways to change and develop their work (Figure 4.24).

Cliffs

Cliffs are a rock face found where land meets sea. They are generally much higher than sea level although the height does depend somewhat on the type of rock that it has been formed from.

Comment [P6]: What processes impact on them? How do they change? What do they look like – use images.

Wave Cut Platforms

These are flat platforms that are found in the front of a cliff. They are formed by the force of the water at the edge of a cliff, finding a weakness. Over time the waves create a notch in the cliff where the weakness was. Once this notch gets big enough the cliff above it is completely unsupported causing the cliff to collapse leaving this platform. The below illustration shows this process.

Comment [P7]: Which erosional processes are involved? Include this in your explanation – so that we build on the detail.



Figure 4.24 – Example of formative feedback given to students

Fieldwork

The fieldwork option was designed to help students not only complete investigations but gain a deeper understanding of the processes and uses of fieldwork in a broad geographical sense. As with the coasts option the intention throughout the unit was to allow students to work as independently as possible. This was achieved through the same combination of lead lessons acting as a foundation for the completion of areas of work all of which led to elements of final portfolio pieces. Fieldwork was carried out with the coasts cohort on the Lincolnshire coast where students were asked to consider three issues:

- possible fieldwork opportunities at each of the locations visited
- risks at the coast
- health and safety issues at each location

These issues were later developed through a session led by the deputy head teacher in charge of school trips and the production of the school's risk assessment form and policy, followed by group presentations assessed as part of the unit portfolio. In these presentations groups were asked to produce a 10 minute summary for school teachers as to the opportunities for fieldwork on the south-east coast of Lincolnshire and the risk assessment implications involved.

The main portfolio piece was based on a personal investigation which was intended to showcase the learning which had taken place as students built their understanding of the investigative process. To aid this process students were given a 'textbook' which like that produced for the coasts unit was meant to introduce the basic issues and knowledge base for the unit, and to develop student thinking (Appendix 14).

To help give students a structure for their projects they were asked to complete a pro-forma outlining the aims and intended methods as well as a GANTT diagram so that their intended timetable of work was clear.

There was no need for a dedicated bespoke website, but all elements of the unit were carried out, at least in part, with the use of ICT. The internet was used for research work and portfolio elements were word-processed or produced using Power-point for group presentations.

As with the coasts unit, students were allowed to submit each element of work once for feedback. Comments were focused on correcting inaccuracies and extending thinking to help develop portfolio work in the same vein as that for the coastal unit.

4.5.3 Results

To gain an understanding of student perceptions of the interventions in this Cycle, three evidence sources were used student diaries, questionnaires and group interviews.

4.5.3.1 Year 9

The Year 9 group completing the unit on My Place, were on the whole very positive about the approach to the course. Their perceptions were sought on the assessment and learning elements of their work.

Assessment

Assessment of the Year 9 My Place scheme of work was developed to evolve from work completed by students as part of the course, emphasising a desire to assess in different media and through authentic opportunities for assessment as opposed to testing or large set piece essays. The result was a rich spectrum of assessments from presentations and posters produced for the advertising exercise outlined on p.194, a decision making exercise, an essay based on fieldwork undertaken in Hunstanton and supported by data analysis on Tower Hamlets, together with the portfolio piece based on their diaries concerning their use of the local area. As such, the variety of assessment formats was extended widely when compared to previous GCSE courses and when compared to the previous experience of the students themselves.

The questionnaire used to canvas reactions to the use of assessment in Cycle 2 showed that when considering the degree to which students felt that work was assessed well and used to support learning, the majority of the students felt that they had been given at least a good level of feedback on their work (Figure 4.25). The girls were slightly more positive than the boys, but overall the students seemed satisfied that they had been given a good level of feedback on their work. The adoption of regular pieces used to check understanding, which were given in electronically, and returned to students with formative comments as the main focus for assessment may be in large part responsible for this positive perception.

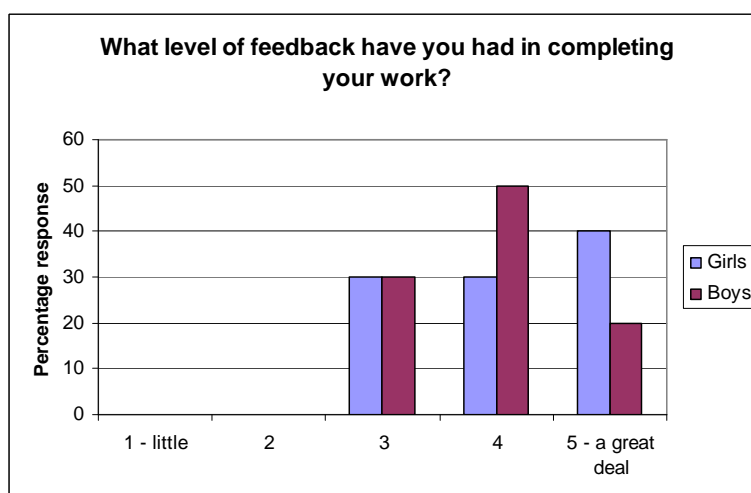


Figure 4.25 Students' perception of the level of feedback received in Cycle 2, Year 9

The feedback given proved to be very useful to the students (Figure 4.26). Again, a high percentage of students were very positive about the utility of the feedback, with 80% of boys and 90% of girls classifying this in the two highest categories.

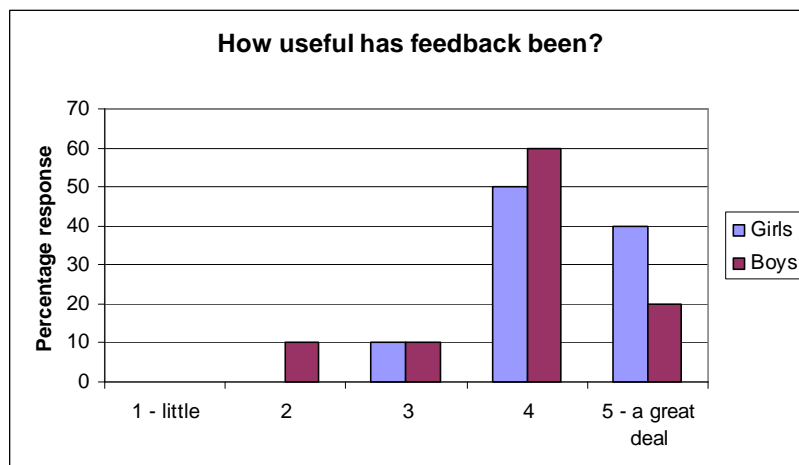


Figure 4.26 Students' perception of the quality of feedback received in Cycle 2, Year 9

Students highlighted the comments based nature of the feedback and exemplified the positive elements of such an approach:

- several students identified that the comments focused on using explanation to highlight the positive elements of the work submitted, then went on to highlight errors and points for correction. Such comments were identified as focusing on both content and presentation.

- a small number of students identified elements within the comments given that not only identified strengths and weaknesses, but also highlighted potential avenues for further improvement. This included cases where there were no incorrect, or even weak or brief, responses, but where very good work could be taken even further.

- one female student characterized the feedback as being based on a 'Cycle' of comments and development, thereby characterizing the feedback as an ongoing process as opposed to an event.

In all cases this demonstrates that the feedback was received positively and was generally seen as an integral element of the learning process rather than a summative event which was divorced both temporally and cognitively from the process of learning.

Slightly less positive was the response of students to electronic submission of work (Figure 4.27). Whilst roughly half of the group were generally positive about the use of e-feedback the other half were either ambivalent, or negative, in their response.

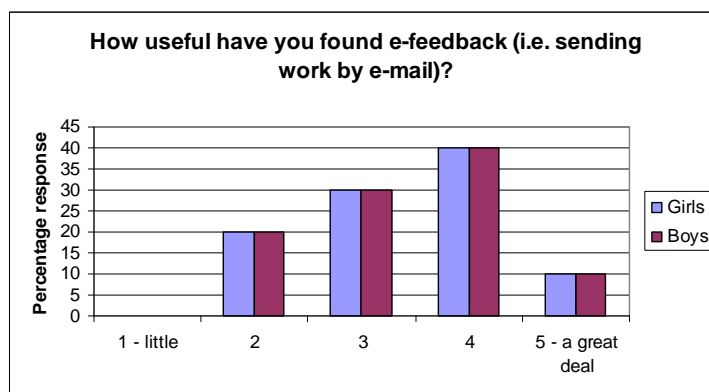


Figure 4.27 Students' perception concerning the use of e-feedback in Cycle 2, Year 9

Of those who preferred the use of e-mail for work submission the main reasons for their opinion centred on the perceived ease and speed of using e-mail. Given that the group had both of their weekly geography lessons in an ICT suite, once e-mail accounts had been created, they believed that it was easier to attach a file completed on the computer to an e-mail before sending it to myself. However, there were some students who said that they would have preferred to hand their work in physically as they were concerned that the file could fail to send leading to them potentially getting into trouble for not submitting work.

An interview carried out with students at the end of the Cycle reflected many of the views collected from the questionnaire. Some further points were highlighted however, one student commenting that 'you have given us our work back with compliments which help me 'cause it tells me I'm doing the work correct' (Girl A, Year 9). Another student commented that 'You have given us a lot of feedback in lessons which gives me confidence to develop my work further' (Boy A, Year 9). In both cases it is obvious that the students concerned valued not only formative, but supportive, comments which helped to develop their confidence and motivation for the work involved. There is also evidence that the students saw the assessment element of the approach taken as supporting the learning in the classroom, for example, one student commented 'The comments I have found most useful must be the ones like 'explain why' 'cause this then helps me improve my work. This was helpful because I can extend my work and explain more' (Girl B, Year 9).

Similar sentiments were expressed by individuals who had kept a reflective diary about their work in the subject over Cycle 2. One girl wrote,

'My teacher has been very committed to the work that I have done and he is very helpful toward all of this. I have had loads of feedback. The feedback has been presented in two ways, on paper and by speech; I get notes on paper. The comments on my work have been very helpful and good. The comments help me to improve my work and it gives people who read it a better understanding on what it is about after improvement' (Girl C, Year 9)

The comments made by students strongly suggest that they felt able to use the regular comments made on their work to develop their learning, in part due to the ability they had to

alter and extend answers relatively quickly as the originals they were working from were electronic and could therefore be edited.

There is a clear sense in both interview and diary comments as well as the questionnaire returns that the use of detailed and focused comment only marking was positively received as there was a natural link to the learning which was taking place, and indeed there is evidence of the students seeing the process as cyclical. However, the use of e-submission of work was less well received by some who preferred the knowledge that the work had been received.

Learning

Cycle 2 hoped to develop and extend three main areas of learning, the use of ICT, development of active and independent learning, and greater levels of personalization. In relation to the overall perception of students concerning how well they interacted with the learning they were asked to undertake, all the girls in the group felt they had learned the work well (Figure 4.28). The boys on the other hand felt less confident that they understood the work, with only 50% seemingly confident of this. This is a major difference when considering the levels of confidence found in boys in the baseline data.

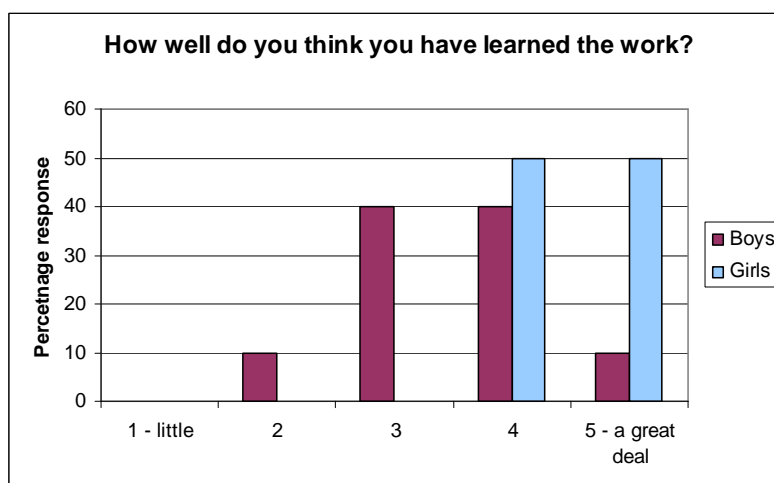


Figure 4.28 Students' perception of their level of learning in Cycle 2, Year 9

Informal discussion with members of the group appeared to suggest that this was in part due to the wide ranging approaches taken. Some of the boys appeared to feel more comfortable and confident if the assessment and learning approaches used were kept relatively simple and were encountered in a linear, and to an extent, didactic manner. Greater use of independent approaches (discussed further below) and exercises such as group work appeared to be less of a stimulus.

Whilst there was a sex difference in the level to which the students felt they had secure understanding of the learning, the opportunity for the group to be located in an ICT suite for all of its lessons meant that the students were able to use ICT at all points during the course. This led to many of the resources produced for past groups being amended for use on computers. This proved extremely popular with the students (Figure 4.29) with 80% of girls enjoying learning through greater use of this medium, with boys nearly as positive at 70%.

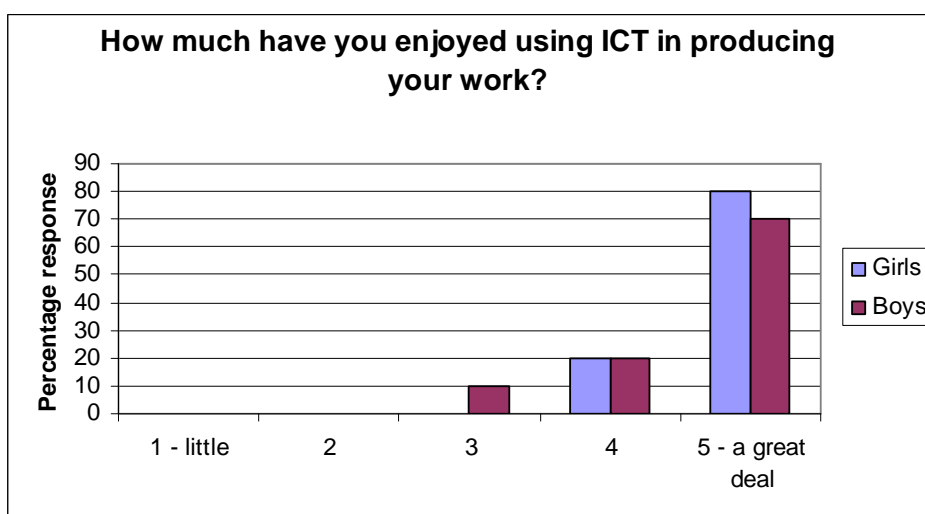


Figure 4.29 Students' perception of their level of enjoyment in the use of ICT in Cycle 2, Year 9

Students, both through the questionnaire and interviews at the end of Cycle 2, gave a variety of reasons for their preference for the use of ICT. A number of students identified their increasing knowledge and competence in using ICT in general, particularly in gaining a greater understanding of how to use software packages to produce pieces of work. There were also a number of students who felt that their writing skills were not very strong and they therefore commented that the presence of spell-checking gave them greater confidence in their written work. Similar comments were also made suggesting that it was quicker to complete word processed documents as opposed to writing by hand. A number of students also highlighted the use of the internet, stating that this allowed them to research information more easily and also allowed them to download images to incorporate into their work as opposed to spending lesson time drawing diagrams.

Whilst the students were very positive about their use of ICT, developing experience within the classroom from a teacher's viewpoint demonstrated that some students used the computers

and internet access to its fullest potential, making the most of the opportunity and aiding their learning. However, a distinct minority, predominantly boys, whilst starting positively in the use of ICT, gradually saw an increasing opportunity to use the internet for gaming or messaging if they believed they could hide this use of the computers from myself. This obviously started to have a detrimental impact on both the quality and quantity of work being produced. On talking to a small number of individuals caught in the act at various points during the Cycle, it became clear that as the level of challenge and need for independent learning increased, together with the initial novelty of working on computers wearing off, a small core of students were attempting to opt out.

The use of active and independent learning approaches such as those outlined above, again led to a number of interesting perceptions from the students (Figure 4.30). The majority of students felt that they had been encouraged to work independently, and indeed viewed this positively in relation to the opportunities they had been given.

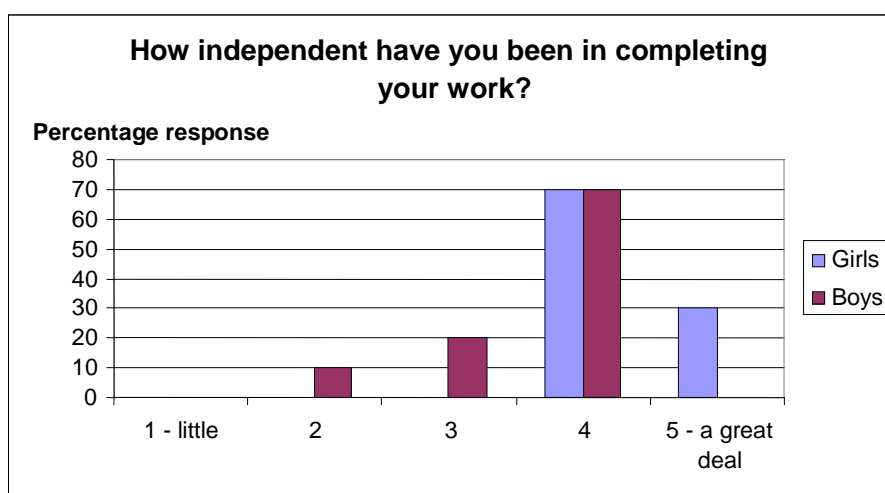


Figure 4.30 Students' perception of their level of independence in Cycle 2, Year 9

When asked which elements of the My Place unit they had enjoyed the most a number of views were expressed. In the interview with a group of students completed at the end of the Cycle, several students identified the fieldtrip to Hunstanton as their favourite element of the course. The reasons for this included the fact that it was 'fun' (Boy B, Year 9), and also the opportunity it gave students 'to work by ourselves without the teachers being around' (Girl B, Year 9). There is also a strong sense that the students found the approaches used not only active, but relevant to them. The interview group also highlighted the portfolio piece based on the diaries of their use of the local area as a high point in the unit. The reasons given were that the outline was focused enough to make the exercise clear, but also allowed enough variation for the students to do 'your own thing' (Girl A, year 9), and that the focus was 'research about yourself' (Girl B, year 9), making the exercise more interesting and relevant to the group as a whole. Further to this, the fact that students were able to write up their portfolio piece on Power-point as opposed to it being a standard written report if they wished, led to some preferring the work as it 'doesn't feel like writing' (Boy A, Year 9).

The students were asked if the work completed in the unit had been challenging and if they were challenged to do their best within lessons. The boys, through the questionnaire, demonstrate a general belief that they were expected to do well and that they had found the work challenging. One return on the questionnaire stated that 'very challenging – the most challenging work I've done at school (boy year 9), whilst another boy stated that 'Yes – it has pushed me on more'. The girls' comments also demonstrate that they were challenged by the work, but appear to present this in a more positive light. One girl commented that 'It's been

challenging but I think I have done well and enjoyed it', whilst another stated 'I always try to do my best'.

On following up on these comments in the interview, the students were clear that the main challenge came from the fact that both the course content and the learning approaches used 'challenges you to think' (Boy A, Year 9). They stated that in many subjects the main mode of learning was through the use of textbooks which allowed them to gain answers from one place and allowed them to be passive. However, through the use of a number of different active approaches, some of which pursued independence, they felt that they were forced to think more and take greater responsibility for their own work.

4.5.3.1 Year 10

The Year 10 group, basing their studies on chosen options, completed work on either coasts or fieldwork. Figure 4.31 shows the breakdown of the choices made by students, showing a roughly equal split both for the whole group and by sex.

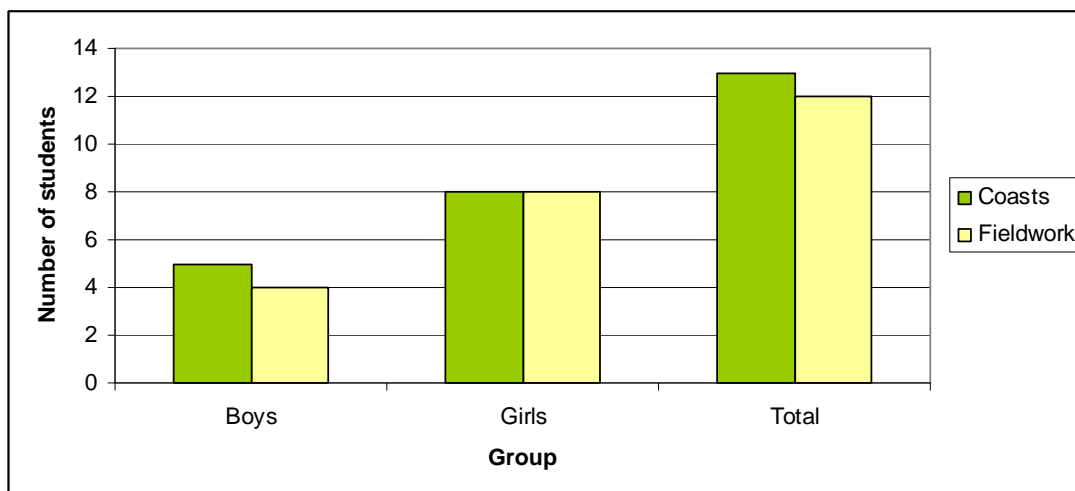


Figure 4.31 Optional unit choice Year 10

As with Year 9, perceptions were sought concerning assessment and learning in their work.

Assessment

Assessment for the options chosen was outlined by the specification (Table 4.16) leading to a clear assessment regime in relation to the work which needed to be submitted by students in completion of a portfolio of work for each unit.

Coastal Management	Investigating Geography through fieldwork
<p>Candidates must undertake and present three different aspects to the work of the Option:</p> <ul style="list-style-type: none"> - one personal response to a coastal landscape (any medium) - one explanation and evaluation of a coastal issue (written with supporting diagrams etc) - one map created by the candidate individually, illustrating, presenting and explaining any aspect of the work studied for the Option (map/annotated or illustrated map). <p>These can be done separately or as part of a single project</p>	<p>Teacher-assessed through two pieces of work:</p> <p>a) 50% - A collaborative piece of work which introduces one element of the fieldwork enquiry. Can be presented as:</p> <ul style="list-style-type: none"> - storyboard - website mock-up - series of annotated diagrams - short PowerPoint presentation - development of a risk assessment <p>b) An individual piece of work which reports back the main findings and wider significance (local/regional/national) of an investigation. Can be in the form of a video or written prose in a journalistic style.</p>

Table 4.16 Assessment regimes for optional units

This assessment regime shows a strong tendency towards authentic assessment, making the assessment both rigorous and practical, including the use of 'journalistic writing' in the

fieldwork unit and personal response to the coast as examples. There is also a wide variety of assessment types in the units allowing for students to demonstrate their competence in different ways and through different media.

When considering the degree to which students felt that assessed work was assessed well and used to support learning the majority of the students felt they had been given at least a good level of feedback on their work (Figure 4.32), with the girls slightly more positive than the boys, as with Year 9. Overall, the students seemed happy that they had been given a good level of feedback.

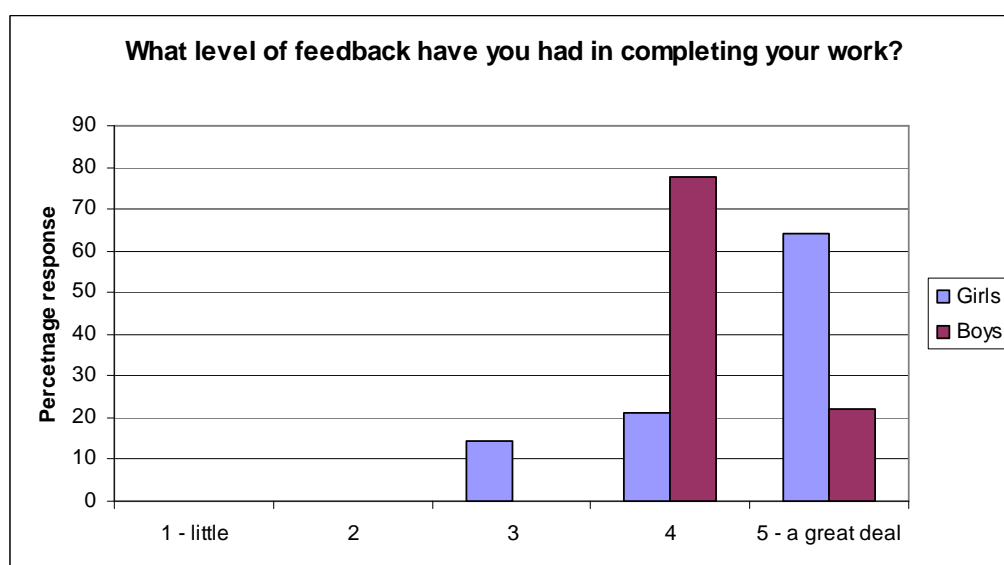


Figure 4.32 Students' perception of the level of feedback received in Cycle 2, Year 10

Unlike the Year 9, the Year 10 students did not hand in work together as a group, but when they were ready with an element of work they had been developing as outlined in the intervention section for this Cycle. This meant that the regularity of feedback was in part dependent on the students themselves. It also led to the opportunity to monitor progress by

students assessed through the pieces and quality of work submitted. It did, however, lead to some early problems of perception. Approximately five weeks into the unit one student complained that I had not fed back any work to her. I went through her e-mail account with her and demonstrated that she had had feedback on four separate pieces of work, with a large number of formative comments on each. The student reacted by saying that she knew that these pieces had been returned but that she thought that these comments were just informal help. Although this is an isolated example it reflects a perception of several students who believed that because work was not being handed in *en masse* as class scale events, the resultant feedback was not being identified as part of the assessment process, until this was made explicit.

The feedback given proved to be very useful to the students (Figure 4.33). Again, a high percentage of students were very positive about the utility of the feedback, with 89% of boys and 86% of girls classifying this in the two highest categories.

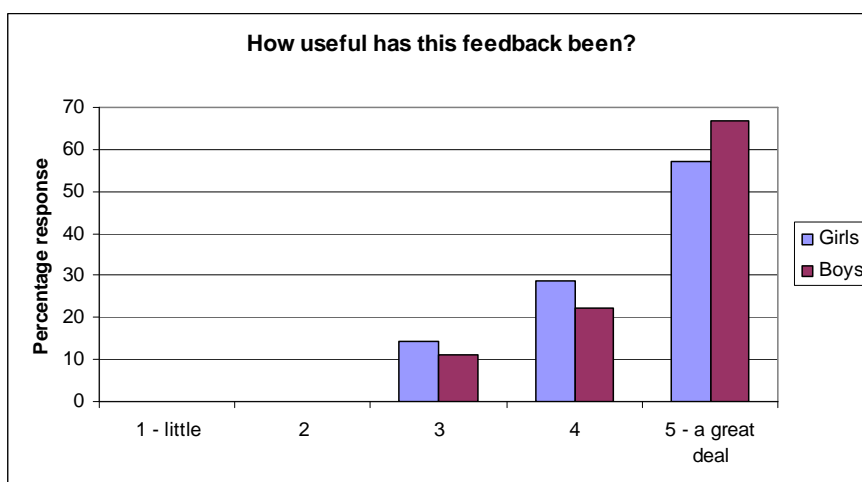


Figure 4.33 Students' perception of the utility of feedback received
in Cycle 2, Year 10

As with Year 9, students highlighted the comments based nature of the feedback and exemplified the positive elements of such an approach. A number of students highlighted the formative nature of the comments, focusing on helping them to improve their work. For example, one student wrote in their research diary:

After handing in our methodology [for the fieldwork unit] the general feedback we got was about how we could improve our work, any errors we have made and good points we had made throughout our work.' (Girl C, Year 10)

Also, a number of students added that as well as the comments being about improvements to their work there was the use of questions to encourage thinking about the work and how it might be improved. One male respondent wrote in the questionnaire 'Guide to foci of work – extra questions to guide flow of work.' This demonstrates an understanding that the comments were in part developed to aid students to think about and extend their work in a cyclical fashion, i.e. developing the use of feed forward, so that they would learn how to take a greater level of responsibility for their work over time. One male student did highlight the lack of grades on their work as a negative issue, but with this single exception, the feedback appears to have been received very positively, and was seen as an integral element of the learning process.

The style of feedback was not the only positive perception concerning assessment. The Year 10 group, more so than their Year 9 counterparts, believed the use of e-feedback to be a positive experience. Figure 4.34 shows that all of the girls perceived the use of e-mail for submission and feedback to have positive utility, whilst the vast majority of boys felt likewise. There were a number of reasons given, including the ease with which work could be given in, the ease with

which work could be extended and amended, and the ability to access work from home meaning that the students did not have to wait for the next lesson to carry on with their work. The minority who mentioned the use of physical submission highlighted the fact that they knew it had been submitted, whilst one student felt that drafts would best be submitted physically, but the final piece electronically.

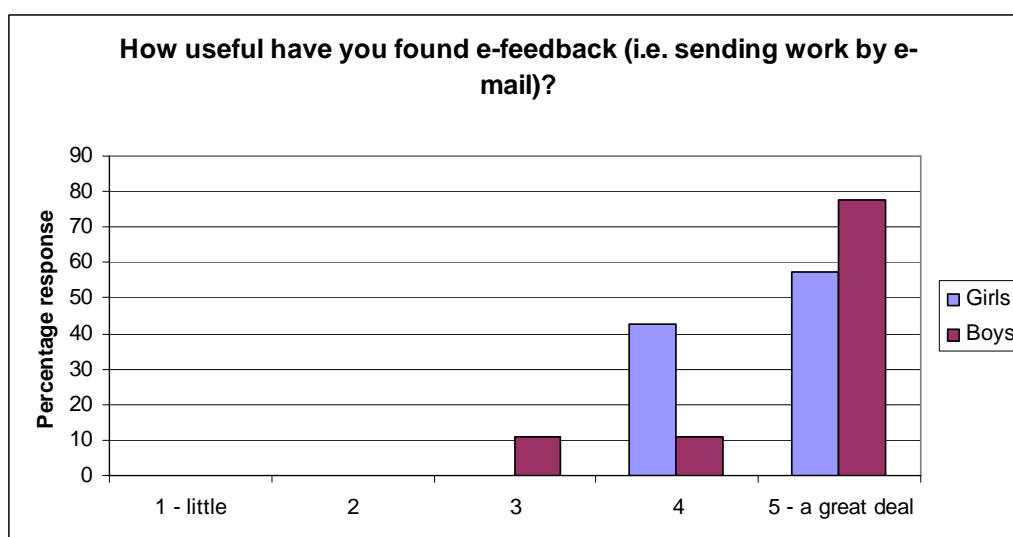


Figure 4.34 Students' perception of the utility of e-feedback in Cycle 2, Year 10

Only one boy said that they would prefer to submit their work physically in the second optional unit, the majority of the group saying that they would prefer to continue to use electronic submission.

Learning

In relation to the overall perception of students concerning how well they interacted with the learning they were asked to undertake, 79% of the girls in the group felt they had learned the work well (Figure 4.35). The boys on the other hand felt less confident that they understood the work with only 55% seemingly confident that they had learned it, a very similar pattern to Year 9. Once again this is a major difference when considering the levels of confidence found in boys in the baseline data where they had been more confident in general terms than the girls.

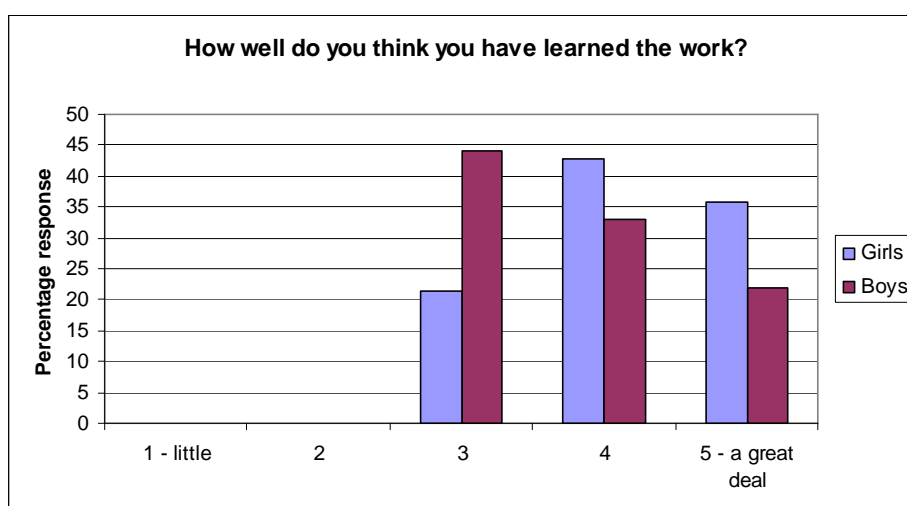


Figure 4.35 Students' perception of the degree to which they understood the work in Cycle 2, Year 10

Informal discussion with members of the group again appeared to suggest that this was in part due to the wide ranging approaches taken. Some of the boys appeared to feel more comfortable and confident if the assessment and learning approaches used are kept relatively simple and well defined. Whilst the boys seem to be happy to attempt work, the independent

nature of the exercises used had also led to some doubt, especially as work had to be more self-directed. As one boy commented in an end of Cycle interview:

'I've enjoyed it but I would prefer to do more exams because doing coursework is a bit of a get out from doing hard work for exams.' (Boy A, Year 10)

Whilst there was a sex difference in the level to which the students felt they had secure understanding of the learning, the opportunity for the group to be located in an ICT suite for half of all lessons meant that the students were able to use ICT at all points during the course. This proved extremely popular with the students (Figure 4.36) with 92% of girls enjoying learning through this medium, with boys even higher at 100%.

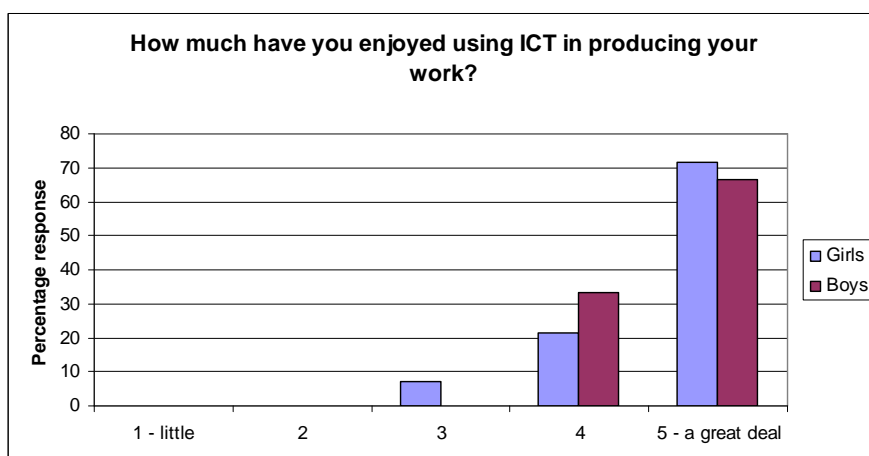


Figure 4.36 Students' perception of their use of ICT in Cycle 2, Year 10

Students, both through the questionnaire and interviews at the end of Cycle 2, gave a variety of reasons for their preference for the use of ICT. The main reasons given for this preference in learning activities were linked to research and the production of work. Given the nature of the work which the students were undertaking regular access to the internet was seen as an

important factor by a number of students when completing the questionnaire. A number of students also highlighted the fact that they could e-mail work between home and school, making their homework activities easier. Associated with this point was a belief that work could be completed more quickly through the use of ICT than if it was completed by hand. Indeed, one male student in the end of Cycle interview stated that:

'the lessons where we haven't had ICT access, but have worked in a normal classroom have been a bit useless. You can get work done, but you are waiting to get back to the computers to carry on with the proper work.' (Boy B, Year 10)

This can be interpreted in two ways, firstly that due to all work being held electronically the lessons in a normal classroom were unproductive due to the lack of opportunity to expand written work held on the school network, or secondly that the student has become reliant on the internet for research purposes, making less use of time to consult books or use the library.

The use of active and independent learning approaches again led to a number of perceptions from the students (Figure 4.37). The majority of students felt that they had been encouraged to work independently and indeed viewed this positively in relation to the opportunities they had been given.

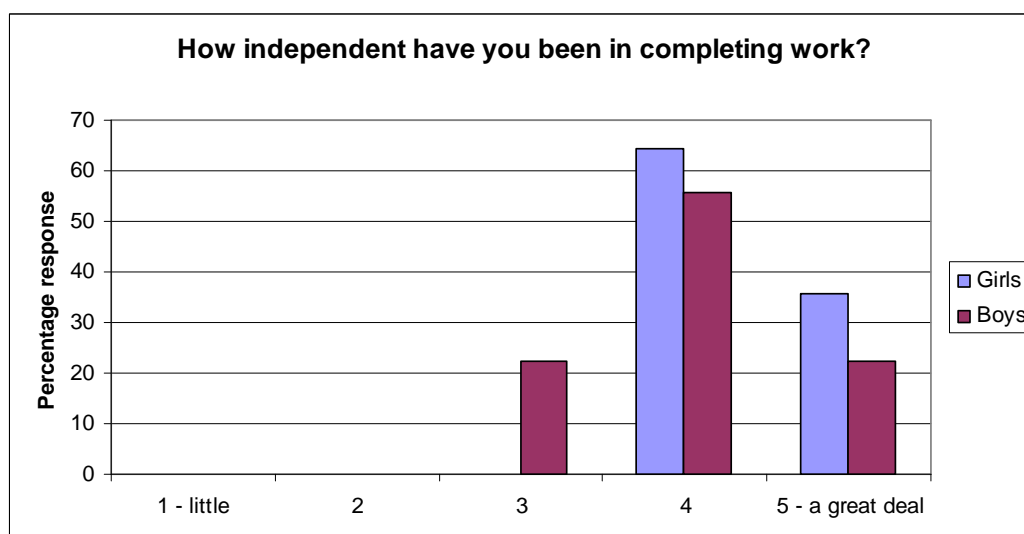


Figure 4.37 Students' perception of the level to which they worked independently in Cycle 2, Year 10

Early in the Cycle, one female student stated in a research diary that:

...we can choose what we want to do so we are really doing our own thing.' (Girl D, Year 10)

Much of the time used to complete the units in year 10 was given over to the development of work by students, sometimes in groups, sometimes individually, with only a limited number of 'key lessons' which were used to introduce aspects of the work. One boy commented during the end of Cycle interview that:

'I would have preferred more structure, with more lessons where you told us stuff. I'm not always that motivated and the way we've been working made it difficult for me.' (Boy B, Year 10)

At the same time, another boy stated that it was the independence that he liked the most as it allowed him to work more at his own pace rather than being held to a pace dictated by myself and other students. Interestingly, this particular individual managed to finish his

coastal portfolio work three weeks ahead of time. In the remaining period of the Cycle this allowed him to complete some personal research into sea-level change, encompassing work on Milankovitch Cycles, ice and deep sea cores and oxygen isotopes - work normally considered to be consistent with second year undergraduate courses. However, he developed a clear understanding of the principles involved and mastered the content very well.

The students were asked if the work completed in the unit had been challenging and if they were challenged to do their best within lessons. One aspect of the questionnaire answers is the way in which many students related the word 'challenge' in the question to 'pressure' in their answers. Several girls stated that they had felt the pressure to do well, whilst the boys generally stated that they had been challenged and this had made them work harder. A small number of students of both sexes stated that the challenge had actually improved their learning. As with the Year 9s there is some evidence from the questionnaires and interview that the challenge was in part located in the need to think, but also, particular to the Year 10s was the notion that they were being asked to work independently for much of the time.

Finally, students were asked in their questionnaire the degree to which they had found the introduction of a 'unit booklet' useful in supporting their learning (Figure 4.38). The girls obviously made use of the booklet. One individual in the end of Cycle interview stated that:

'It's good for getting basic stuff before you go somewhere else for more detail. The questions and thought bubbles are also good 'cause they do make you think and help you learn.' (Girl A, Year 10)

However, in the same interview, one of the boys stated that:

'They're good for basic information, but I don't use it for much else. I'd rather use the web.' (Boy A, Year 10)

This is reflected in the questionnaire results, which show the girls making more use of the booklets in general than the boys. It would appear that this may be linked to the girls wanting to source information and ideas from a variety of areas, as opposed to the boys, many of whom believed they would get what they wanted or needed from the internet.

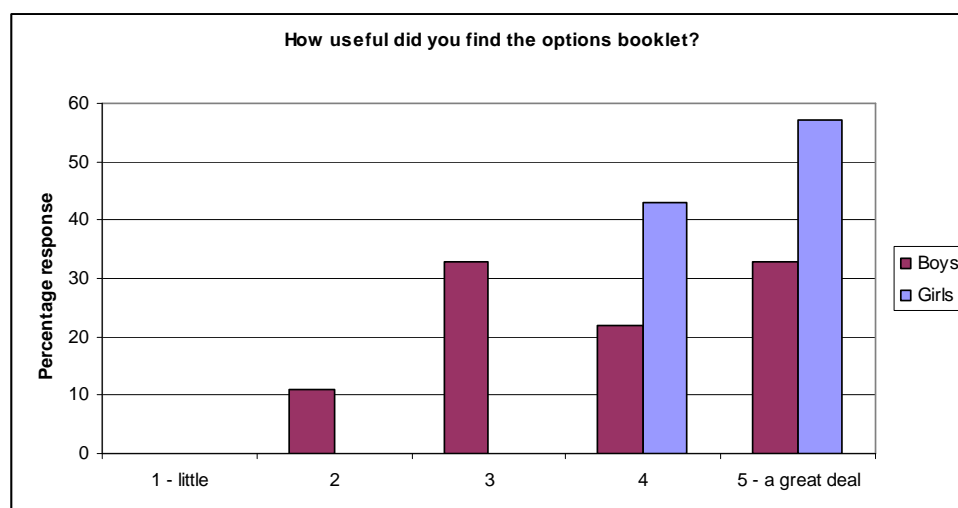


Figure 4.38 Students' perception of the utility of the options booklet in Cycle 2, Year 10

4.5.4 Discussion

The results from Cycle 2 demonstrate that the students in both Years 9 and 10 were predominantly very positive about the way the course was structured and developed. It is obvious that the majority of students preferred the active and alternative approaches taken in the course, especially in those areas where the baseline data had already suggested student preferences, for example in the use of ICT. The results for Cycle 2 suggest that Hargreaves'

(2005) belief that the use of ICT offers greater motivation and engagement is correct, in the most part. With the exception of a small group of Year 9 boys, who increasingly saw the use of ICT as an excuse to divert their attention away from work, the majority of students appear to have been motivated by the greater use of ICT within the course.

Hargreaves (2005) argues that the inclusion of ICT can lead to greater independence in learning, and this may have played a role in a wider and generally positive reaction to the inclusion of independent learning. A minority of students, especially boys, found this change in their learning more difficult to cope with, but on the whole saw the challenge offered as a positive one. The levels of independence planned into this Cycle of the action research were different for Years 9 and 10, with Year 9 being exposed to a level of independence closer to 'level two' of Betts' (2004) research and the level of personal autonomy as outlined by Ecclestone (2002), i.e. I had begun to play a role in forming the curriculum content through modifications to a regular format, giving a level of choice within the classroom, with negotiated processes (and to a lesser degree) outcomes. Year 10 had moved even further towards independence, showing signs of 'critical autonomy' (Ecclestone, 2002), through evidence for students critically reflecting on their work and thereby playing an active role in questioning the barriers to their own understanding, although it must be admitted that some students found the high level of independence difficult to cope with. The reaction to independent learning development between the sexes could be seen as a contrast to the baseline data where confidence in learning seemed stronger in boys than girls. There is greater evidence that it was the girls who met the challenge of independence with a larger degree of confidence than the boys. What is also interesting is that the students needed to play a fuller role in their learning, including the

need to take risks, albeit in a supportive environment. The notions of pressure, stress and the lower female confidence in learning, all features of the baseline data, were seemingly absent. This suggests that a supportive environment focused on development, measured risk taking and shared endeavour negates some of the negative perceptions of learning evident in the baseline data.

Whilst baseline data suggested that students prefer grades to comments, the results from the assessment element of Cycle 2 appear to suggest that the students were positive about comment only marking. An important element of the comments made was the use of explicit feed-forward (Torrance, 1993) which the students commented on as being very important in the development of their work. This led to a number of students commenting on a developing dialogue over a period of time, the result of comments developing ideas over time, leading to comments and associated learning which occurred within an evolving situation rather than a use of isolated comments (Crooks, 1988). As with the developments in learning, the changing focus on assessment appears to be because the curriculum is focused on learning rather than ultimate attainment, and as a result the use of embedded formative assessment alongside an active and formative approach to learning makes for a more unified and coherent system. As such, the comments of Resnick and Resnick (1992) quoted on p. 67 seem apt, in that where assessments develop a number of different competences such as essays and problem solving, the students will practice and develop their skills in those areas. The embedded nature of assessment as identified by students, together with a focus on targets and comments which develop learning further, has led to the introduction of a 'learning paradigm', as characterised by Broodfoot (2007): a focus on learning which is professionally led and which focuses on the

process of learning in the classroom as opposed to a pure interest in outcomes. This is similar to both Askew and Lodge's (2000) co-constructivist model of teaching and feedback, and the synthesised model of curriculum, learning and assessment offered at the end of chapter 2, on p.92.

4.5.5 Conclusions

The two groups under analysis both appeared to have found the learning which they undertook valuable, and on the whole they enjoyed the work they were asked to undertake. The integration of ICT into the curriculum, when classroom based, was popular and did aid the move towards independent learning. However, there were issues with the use of ICT. In Year 9, some boys increasingly found the lure of the internet difficult to resist and started to lose focus on the work in hand. In Year 10 the use of ICT was important to the students as they were working wholly independently and perceived the constant need for access to the internet. This led to a consideration of how ICT could be further embedded into learning without it dictating the process.

There were also elements of the work carried out in the Cycle which did not receive totally positive reactions. Some students did not find the use of e-mail a positive step as part of assessment, otherwise the model used for establishing formative assessment within the course appeared to work very well, possibly due to its form being in synergy with the learning approaches taken. Also, the level of independence became an issue for some in Year 10 who found the management of their own learning difficult to come to terms with.

Taking the results of Cycle 2, certain foci became apparent in developing the learning environment for Cycle 3. Using Stenhouse and Shepard's tripartite model of curriculum, assessment and learning, the main foci for development became:

Curriculum

Set by the awarding body, it was decided that:

- *Year 1 (Core)*: The students would complete the remaining core units, but a greater level of independence would be created whilst not moving to complete independence.
- *Year 2 (options)*: Students would be given a choice of units to follow in completing portfolio work for their final assessment. In the second half of the year they would follow either travel and tourism or cultural geography.

Assessment

This element did not need large scale change as it was felt that students were positive about their experience, and from a teaching perspective, this element of the emerging practice was already well, and positively, embedded. Therefore, as before, the focus was on:

- *Year 1 (Core)*: Formative assessment would be clearly embedded within the work of students, with comment only marking, together with use of the portfolio style assessment elements of the Pilot GCSE to allow the broadening of learning activities.

- *Year 2 (options)*: As with the Year 1 group, formative assessment would be clearly embedded within the work of students to focus on the improvement and development of work. The more flexible assessment framework for the optional units was also taken as a starting point for enriching the learning activities used during the course.

The only change from Cycle 2, was that students would be allowed to submit work in either an electronic or physical form.

Learning

Cycle 2 was in part used to explore and develop the inclusion of both varied learning approaches, and to encourage the development of independent learning. Active learning approaches had proved popular, and were to be retained in Cycle 3, but different degrees of independent learning were to be investigated:

- *Year 1 (Core)*: The development of a scheme of work which retained some use of ICT, but was planned to isolate students from the computer suite on a regular basis so as to retain impetus in learning. Also, there was a retention of active approaches, whilst developing the level of independence in student work.
- *Year 2 (options)*: In Cycle 3, students would continue to make regular use of ICT, but there would be planned elements of the course which were to be carried out without its use. A greater level of structure was also to be incorporated into the unit, whilst retaining important elements of independent learning.

In a sense, Cycle 3 became an opportunity to 'moderate' some of the ideas explored in Cycle 2 so as to 'mature' the model of linking notions of curriculum, assessment and learning.

4.6 Cycle 3 – Second Full Intervention Cycle

4.6.1 Introduction

Cycle 3 started in January 2006 running until July 2006. Cycle 2 had resulted in a number of issues which needed to be pursued in Cycle 3, as outlined at the end of Cycle 2 (p. 228-230).

These foci became the central concerns for Cycle 3.

4.6.2 Cycle 3 Intervention

Due to the success of Cycle 2, Cycle 3 became an opportunity to ‘fine-tune’ the model already developed.

4.6.2.1 Year 9 Core Intervention

During Cycle 3, two schemes of work were covered, Extreme Environments, focusing on the Himalayas, and People as Consumers. In both cases a piece of portfolio work needed to be completed and an examination was also prepared for, taken towards the end of the academic year and covering all aspects of the work undertaken during the year.

In an attempt to make the curriculum more independent in nature the two schemes of work were planned to ensure that students were required to undertake some exercises which were based on research and a level of creativity. In the case of Extreme Environments this was done by mimicking the general framework for learning which had been established in the first half of

the Year 10 curriculum. Therefore, the work which needed to be completed for this scheme of work was set out as a staged continuous exercise (exemplar in Appendix 15). The underlying theme was the development of a guide, part of the 'Essential Guides Series', a fictitious series which was meant to supplement travel guides by giving a deeper level of information about the background of a region of interest. The guide was to be written in the form of six chapters:

- 1) Experiencing Extreme – an introduction to extreme environments
- 2) Heading out – a general introduction to the region, such as locations, etc
- 3) Imagining Heaven – a look at how others have represented the Himalayas
- 4) Digging deep – a discussion of the geology and physical geography of the region
- 5) Meeting the challenge – how people have adapted to live, work and enjoy leisure in the region
- 6) Looking to the future – a consideration of the possible futures of the Himalayas

Each chapter was supported by further focused resources to aid and help retain interest and motivation in each area. As such it was easier to plan the curriculum with targeted use of ICT and therefore decrease the use of the ICT suite which the group had been located in for the whole of Cycle 2. The scheme of work was also supported with an optional fieldtrip to the Lake District, developed as an experiential opportunity for students from the edge of the Fens to help them gain a deeper understanding of the scale of mountain environments.

The People as Consumers unit was not altered from the approach which had been developed the year before, retaining the use of the website activity which had been developed in Cycle 1, although this was completed, in part, in lesson time.

As stated above, the curriculum had been revised after reflecting on the experiences of Cycle 2, particularly to diminish the reliance on ICT and also to focus on developing research skills other than those focused on the internet. A simple example of this was the use of atlases to find basic data about some of the Himalayan countries. This demonstrates the essentially 'structured independent learning' which was used throughout the unit of work. As information was found and understood it formed the basis for focused ICT sessions where the guides were developed using Microsoft Publisher. The different foci for the chapters ensured that there was a wide spectrum of types of information and stimuli used. For example, the third chapter (Imagining Heaven) required students to approach their work from an empathetic viewpoint including the production of their own creative writing. When it came to the fourth chapter (Digging Deep), rather than using standard textbook approaches to glacial landscapes a Power- point presentation was developed which was then narrated over using Breeze Presenter, a software package which animates Power-point presentations with a narration, allowing individuals to listen to and watch, pausing, rewinding and fast forwarding the information contained at any point. This was a simple, but effective way of allowing students to develop their understanding of glacial processes at their own pace. Their attention was focused through the use of a guidance sheet to ensure that they had understood the concepts and processes involved. The approach taken with the Extreme Environments unit of work allowed for the broadening of the

notion of research, as students moved away from sole use of the internet and also allowed the learning to remain active whilst making it more independent.

The final innovation in this unit of work was the inclusion of a fieldtrip to the Lake District. Knowing from the baseline data that fieldwork was a popular learning approach amongst the student body of the school, it was decided to deepen the experience of extreme environments by giving students the opportunity to experience at first hand an extreme environment for themselves. The students are from a location on the edge of the Fens, and as such many have little appreciation of mountain environments. Whilst these can be illustrated through photos and Google Earth, the scale and sheer size of the landscapes are lost. Students were taken to three locations within the Lake District where the work completed in class on glacial landscapes was exemplified. An example was a walk into Mickledon, at the head of Great Langdale, where there is a large U-shaped valley, scree slopes, truncated spurs and arêtes. The students also spent a half day at Rheged, the location of the National Mountaineering Exhibition where they could trace the development of high altitude mountaineering and watch a documentary about climbing on Everest in an iMAX cinema.

As explained earlier, the final unit of work, People as Consumers, was a stable area of the curriculum. The general approach followed that of the Extreme Environments unit, with a mixture of class based work and ICT. The web based activity from Cycle 1 was used again, but on this occasion it was completed in class time given the reaction and feedback from the students in the analysis of that Cycle.

Formative assessment continued to play a central role in the learning of the Year 9 students, together with externally assessed short portfolio pieces in the two remaining units. However, at the end of Cycle 3 there was an external examination which was part of the assessment regime. The external examination was a 90 minute paper which uses pre-release material as a stimulus for the examination questions. The questions focused on one of the three units of work covered across the year as the main element of the exam, with only small elements included on the other two units. To integrate the skills required within such an examination approach the students were given an exercise on the Himalaya which was based on a resource booklet. This meant that the assessment fitted well with the style of learning undertaken by students and allowed students to see the activity as an inclusion of their work, rather than as a 'past paper'. However, it also allowed for the practicing of the examination technique which students would use in the final examination, including time management.

By the end of Cycle 3, the curriculum, learning and assessment regimes were aligned to support each other in developing an interactive and independent learning led classroom, which allowed students to use and develop a number of learning approaches. In this way, the level of personalization of learning had developed a great deal.

4.6.2.2 Year 10 Options Intervention

During this Cycle Year 10 students had a choice of completing an optional unit on either cultural geography or travel and tourism. Enabling two options to run at the same time led to the need to develop a classroom approach which would allow both sets of students to work efficiently,

whilst also needing to work with separate option cohorts when introducing elements of the units. Copies of the schemes of work for cultural geography and travel and tourism are given in Appendices 16 and 17.

Cultural Geography

The cultural geography unit focused on several elements:

- the meaning of culture and how this is experienced at local to national scale.
- the role of multiculturalism.
- the meaning of place and how it is portrayed.
- the role of culture in our everyday lives, and the increasingly central role of globalization.

There were three portfolio pieces which needed to be submitted by students. The first piece was a personal reflection on the characteristics and challenges of multiculturalism which could be completed in a medium of the students' choice. The second was a group work multimedia piece on the cultural geography of the students' local area, and the final a magazine piece on the rise of a 'global culture'.

As with the units of work completed in Cycle 2, students were introduced to each section of work using various stimuli and were then asked to develop the ideas presented. The booklet developed for this unit was used more extensively than had been the case in Cycle 2 as there

were far fewer resources available for this area of the subject. This was due to the general lack of cultural geography existing in the school curriculum. As such, few published resources existed at the time the unit was being completed.

However, whilst the core source of material for the unit was the booklet the assessment regime meant that there was ample opportunity for students to develop a number of approaches in their learning. This was especially true of the second portfolio piece which was a group task (Appendix 18). Students were asked to create a multimedia installation showing different representations of their own place, including the ideas developed in the course concerning dominant and sub-cultural representations of culture and place. This particular piece of work resulted in the need for students to develop their own fieldwork ideas as they decided the types of information they would need to include and how they would collect it.

An important aspect of the cultural geography unit of work was an attempt to continue developing independent learning approaches, but at the same time ensuring that the available resources, especially ICT, were used purposefully. Some of the feedback from students concerning the units in Cycle 2 had been that they had enjoyed them a great deal, but that there was some limited concern over the degree of independence which some students found difficult to deal with. As a consequence, the cultural geography unit was designed to allow students to conduct independent work, but each element was made to be slightly smaller so that there was more staged intervention and support.

As before, feedback was offered on a regular basis and students were told that they could submit their work either physically or electronically. Due to there being three portfolio pieces in this unit, deadline dates were clearly set for each, and as before, ONE draft for these pieces was allowed for comment. This again led to students having a decision as to the point at which they would submit this work. As before, there was no single draft hand in date, but in all cases formative comment only feedback and feed forward was offered.

Travel and tourism

The travel and tourism unit of work was identified as an 'applied' unit. This means that it was developed to include a level of 'vocational' content, in this case, focusing on career opportunities. The main elements of the unit were:

- what tourism is, where it occurs, and the different types involved.
- reflection on personal experiences of tourism.
- an investigation into two contrasting destinations
- an investigation into a travel and tourism company

There were two main portfolio pieces, being a personal reflection on a holiday experience and a longer, critically illustrated report comparing two chosen travel and tourism destinations. This was designed to demonstrate an understanding of the importance of travel and tourism to each destination and surrounding area, possibly through the development of one focused issue or a

general comparison. It also had to evaluate the impacts of travel and tourism on the two destinations and make predictions for the future.

The approach to the unit was the same as that for cultural geography, with introductory elements where the students worked directly with me to develop an area of work and then they were asked to develop those ideas through the completion of supported independent learning. Appendix 19 shows an early task which was relatively simple in nature, asking students to show patterns of tourism originating in the U.K. However, there were also some research related tasks such as identifying the main transport terminals within the U.K. As a consequence, the students were expected to work independently for approximately one to two weeks to complete such an activity once the subject content had been introduced and discussed. The work included the use of ICT, but in a more structured way than had been the case in Cycle 2. More resources were readily available to support learning than was the case with cultural geography, but a booklet was still provided for students to help support their work. Finally, unlike the other three units, there was no opportunity to undertake an organised field trip during Cycle 3, making this unit the only one in Year 10 not to have an explicit fieldwork component.

This unit allowed for a number of approaches to learning, especially in relation to independent learning through the inclusion of the portfolio piece focusing on a comparison of two destinations. This learning was supported by continued use of formative feedback throughout

the unit and as with the cultural geography unit, students were allowed to submit ongoing work by either e-mail or physically.

In Cycle 3 both optional units were designed using many of those approaches developed in Cycle 2 as they had been successful. However, as outlined above, both units included more guided independent learning, with the content and learning being more structured whilst allowing for independent approaches nevertheless.

4.6.3 Results

As with Cycle 2 a questionnaire was used to gain some understanding of student perceptions, supported by student diaries and interviews which focused on understanding the views of students concerning work across the whole year. Finally, in the August, results were returned giving data focusing on attainment, and allowing a consideration of student attainment.

4.6.3.1 Year 9

Students gave their views on assessment and learning as with Cycle 2. However, towards the end of the interview carried out with a group of the students, broader issues were considered which encompassed views concerning the whole course.

Assessment

As minimal changes had been made in the way that assessment had been integrated into the learning process within the classroom there appears to be a similar pattern of perceptions concerning the nature and process of assessment as was found for Cycle 2. Assessment continued to be fully integrated into the learning process, feedback being offered as work was completed and being comment based. As a consequence, students generally felt that they had received a good level of feedback (Figure 4.39), although the girls were considerably more positive than the boys, who were in fact more negative than they had been in Cycle 2. However, whilst there is some disagreement in the level of feedback, there is no doubt that the students have understood the formative nature of the process involved. In open responses on the student questionnaire both sexes highlighted that the nature of the feedback was focused on feed forward, concentrating on how work might be improved, one boy stating on his return, 'focused on taking my work further – also breaking it down and taking it step by step'. This is supported by diary comments,

'Dr Wood has also given us a lot of feedback in our work when giving us our work back from doing an assessment with a compliment or what I'm doing right or what to do to improve.'

(Boy A, Year 9)

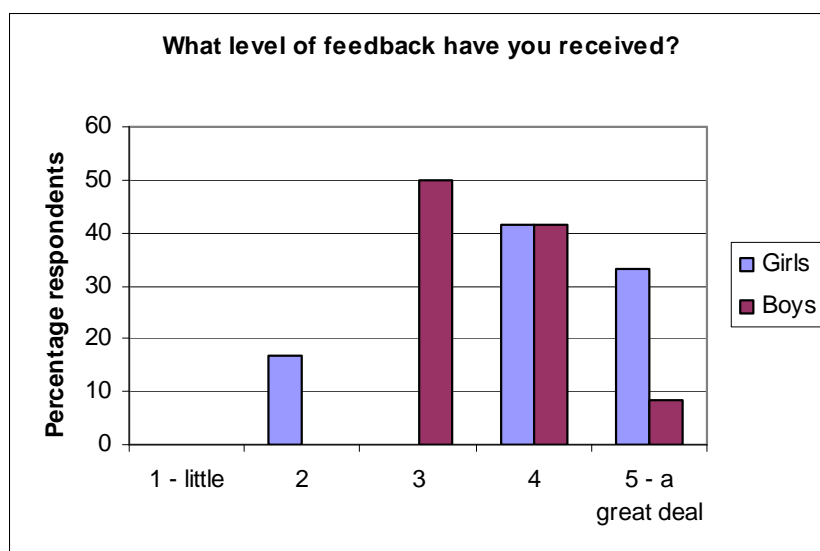


Figure 4.39 Students' perception of the level of feedback received in Cycle 3, Year 9

'My teacher has been very committed to the work that I have done and he is very helpful toward all of this. I have had loads of feedback. The feedback has been presented in two ways, on paper and by speech; I get notes on paper. The comments on my work have been very helpful and good. The comments help me to improve my work and it gives people who read it a better understanding on what it is about, after improvement'

(Girl B, Year 9)

There is also good evidence that the students were using the feedback and feed forward comments in a proactive way. In the end of year interview with members of the group, one student commented that:

'If you're doing an essay you can look back at the last one and see what you need to do to do better'

(Girl A, Year 9)

The general utility of feedback is therefore again shown in Figure 4.40, where both sexes again identified the feedback they received as being helpful in developing their work. This is as

positive as it had been in Cycle 2, and in the case of the boys, even more so. The formative nature of the process was clearly seen as the main factor for this positive reaction.

Having completed more assessment by the end of the year, in the final interview students were asked to consider both the levels of challenge presented by the portfolio and examination assessments, and how both formative and external, summative assessments compared to other subjects.

The first question asked students to compare the styles of assessment used in geography against other subjects in the curriculum. There was a clear belief that in most other subjects assessments were predominantly developed through the context of textbook exercises. One boy commented that 'we just work out of textbooks in other subjects' (Boy A, Year 9).

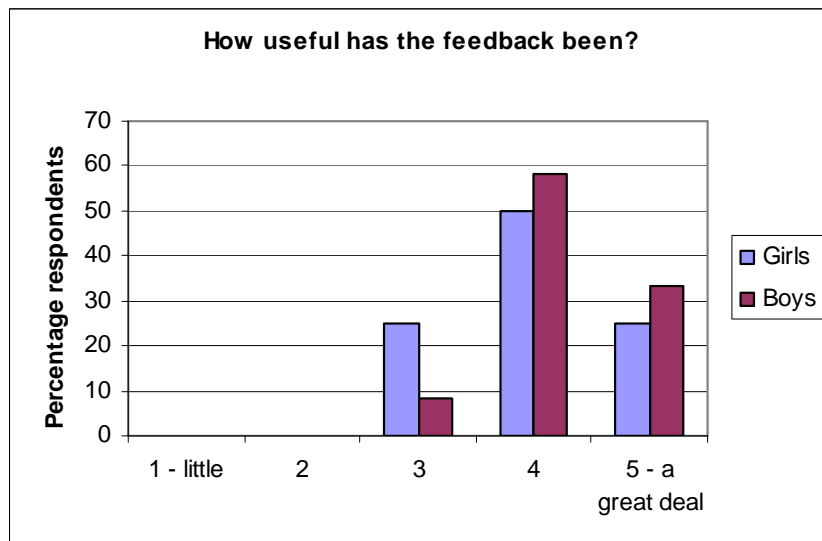


Figure 4.40 Students' perception of the utility of feedback received in Cycle 3, Year 9

One of the girls in the interview group stated that 'In History we have a textbook and just work out of that.' (Girl B Year 9). They did, however, identify Geography as a subject where there were a wide number of different assessment opportunities. One of the boys stated that 'the geography assessments test us out in lots of different ways' (Boy B, Year 9). None of the students interviewed showed any preference for the examination at the end of the year, but were far more positive about their opportunity to complete assessments which led to part of their final result in more than a single mode. One of the girls interviewed stated that she had enjoyed using Power-point as a medium for completing her work on her personal diary piece in My Place. One of the boys had obviously found the inclusion of a level of choice as important in enjoying formal assessment, 'My Place in general was the most enjoyable unit and assessment. You could decide what to do and how to do it when we completed our diary piece' (Boy B, Year 9).

Finally, in considering the students' views concerning the level of challenge the assessments had created the students showed a perception of difficult, but enjoyable, assessment experiences. One girl stated that 'they're challenging but fun' (Girl A Year 9), a statement agreed with by one of her peers 'Yeh, 'cause you have to think about it' (Girl B, Year 9). The boys highlighted more those assessments which were harder, stating that the portfolio piece for Extreme Environments, based on writing about different people's perceptions of the Himalaya, had been the most difficult. However, given the mid-ability nature of the group, it was positive to hear one student state that 'Yeh, the extreme environment one was really hard, but things like that 5 page essay [focusing on notions of place and how to define it as a concept] were good to do.' (Boy B, Year 9).

These views suggest that the students enjoyed the challenge offered by the assessments completed during the course. They identified the far more varied modes of assessment in their geography course when compared to other subjects and saw how the embedding of those assessments within their learning had led to a positive formative process which had taken their learning forward.

Learning

Cycle 3 was focused on trying to extend the level of independence of learning by the year 9 group whilst also keeping an active approach and ensuring greater focus in the use of ICT. The students, as in Cycle 2, were confident that they had learned the work well during Cycle 3 (Figure 4.41). This is also reflected by the interview group who were asked how much they thought they had learned over the course of the year.



Figure 4.41 Students' perception of the level to which they had understood the work in Cycle 3, Year 9

One boy stated that 'I've learned quite a lot actually, of new stuff.' (Boy A, Year 9). When comparing the subject to others in the curriculum, a girl stated that she had '...learned more than in other subjects because you don't do it in the same way all the time.' (Girl B, Year 9). Indeed the other girl in the interview group stated that 'It's been a long year – I've taken too much in.' (Girl A, Year 9). Therefore, it is clearly apparent that the students felt confident that they had learned the work well and that they had certainly learned more than in other subjects, in part due to the variety of approaches.

Many students highlighted the variety of approaches as a positive element in the course through responses to the questionnaire used at the end of Cycle 3. Students emphasised the variety 'I have enjoyed doing work in different ways' (Girl, Year 9), and some actually highlighted the opportunity to 'play' with different ideas and approaches 'Good fun trying out new ways of presenting ideas' (Boy, Year 9). This notion of 'exploring new ways of working' (Boy, Year 9) was a strong sentiment remarked on by a number of students in their questionnaire returns and shows a willingness amongst the students to see their learning as developmental and exploratory. With some students there was also a strong sentiment that part of the reason for enjoying alternative approaches was the shift away from writing all the time, something strongly suggested as a mainstay of much of the work covered in other subjects.

The use of ICT was still a core feature of their perceptions about positive learning experiences. Even here, however, there was a seeming perceptual change. Figure 4.42 shows a similar level of preference for the use of ICT as in Cycle 2, but importantly the remarks of the students in

open response answers about their preference for ICT were less focused on the 'procedural' elements of this work than had been the case on Cycle 2. Students identified some of the procedural elements as in Cycle 2, such as ease of internet research, and speed of editing, but were now highlighting factors such as 'the use of computers in developing presentations' (Girl, year 9), and 'ICT is good for handling data, doing simple statistics stuff.' (Boy, year 9). In these cases ICT is being seen more in terms of its core utility in aiding learning, rather than as a simple alternative to writing.

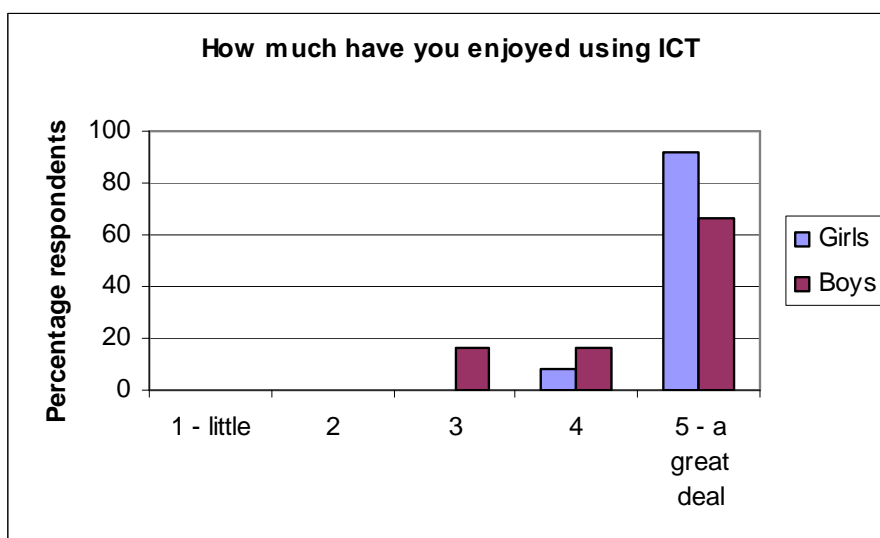


Figure 4.42 Students' perception of the level to which they had enjoyed the use of ICT in Cycle 3, Year 9

Students appear to have enjoyed the greater level of independence in their work. Both sexes felt that there had been a clear level of independence in their work (Figure 4.43), a typical view being expressed in a research diary completed by one of the boys.

'The work we are doing needs a lot of data to help us with, so Dr Wood has given us websites to find this data so he won't make it too easy for us and other things to find as well.'

(Boy C, Year 9)

A similar diary entry was made by one of the girls focusing on a piece of work they had completed for the People as Consumers unit of work,

'Our focus on the work has been Coca-Cola portfolio piece. This is about the globalisation, what the brand is and how it is made. We used different websites and our own knowledge to do the work, the websites were given to us by our teacher.'

(Girl C, Year 9)

Independent learning was developed in conjunction with a variety of learning approaches and it is clear that developing such a framework proved popular.

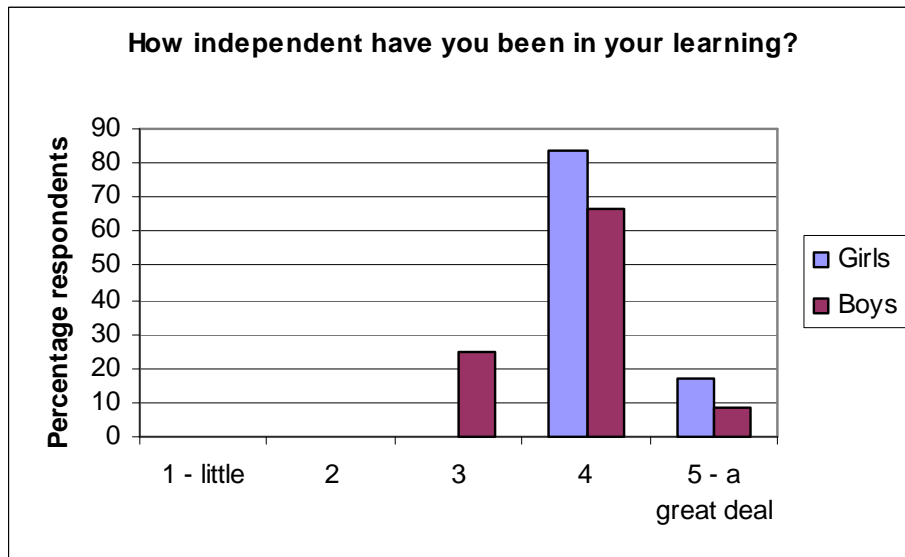


Figure 4.43 Students' perception of the level of their independence in Cycle 3, Year 9

The Cycle 3 questionnaire asked students to identify their favourite parts of the course. The My Place portfolio piece was the most popular single piece of work throughout the course. Reasons given were the freedom students had to develop their ideas and the opportunity to focus work on their own lives, leading to greater relevance. The other element of the work which was highlighted in both the questionnaire responses and the interview was the Hunstanton fieldtrip.

One boy stated that,

'The trip to Hunstanton [was the most enjoyable element of the course], 'cause it was fun, I learned a lot, and we could walk around by ourselves to do the work.' (Boy A, Year9).

This appears to demonstrate that the students enjoyed active learning opportunities which also included an inherent level of independence. Further, it is apparent that the students found any return to a more didactic approach to learning in explicitly negative terms. In preparing for the final examination at the end of the Core course one student noted in their diary,

'We were revising for our exam by doing lots of booklets and doing everything we need to do for that. This is not very interesting as it is only booklets.'

(Boy D, Year 9)

Having been introduced to a different approach to learning, where independent work and active media were consciously developed, it is apparent that students quickly deemed this an expectation as they felt far happier in developing their work and learning in this way.

Finally I asked the interview group to reflect on my role as the teacher over the course of the year. This was done to try to gauge whether the students perceived my role as being different

to what had gone before, and/or different to their experiences in other subjects. There was a perception among the students that my role had been somewhat different to what they were used to. One boy stated that,

'It's been different, you don't stand at the front and talk all the time. You spend much more time walking round and helping when we need it.' (Boy A, Year 9)

In a similar way, one of the girls commented that:

'Teachers normally just explain and then leave us to work out of the textbook, you're much more involved with the group.' (Girl A, Year 9)

Therefore, the students appear to perceive my role as being more of a mentor and facilitator for their learning, with periodic, more formal, elements of teaching normally when introducing an area of work.

Final Results at Year End

Whilst student perceptions were on the whole very positive over Cycles two and three, it was also important to gauge the degree to which these perceptions were reflected in the results for the work which was externally assessed. Overall, these results were very positive (Table 4.17). The boys, as a group, performed slightly better than would be expected from Fisher Family Trust predictions, and the girls did even better as a group attaining an average points score half a grade greater than expected.

	Expected grades*	Actual grades	Difference
Boys			
Average points	4.9**	5.1	0.2
Girls			
Average points	4.9	5.4	0.5

Table 4.17 Year 9 Average Core Course Results by Sex

(* - expected grades those predicted by model D in Fisher Family Trust (grades calculated using top 25% of schools in the country); ** - values based on numeric scores taken from GCSE grades, G =1, F =2, etc)

The distribution of the numeric difference expected to actual grades can be seen in Figure 4.44 for the boys and girls. The boys' achievements are close to a normal distribution, with four individuals doing less well than expected, whilst five did better. The girls however did extremely well, with only two individuals doing less well than expected, whilst eight gained a better grade than predicted by Fisher Family Trust data. Overall, this shows that the students in the group did exceptionally well. However, an identifiable gender imbalance does appear to exist.

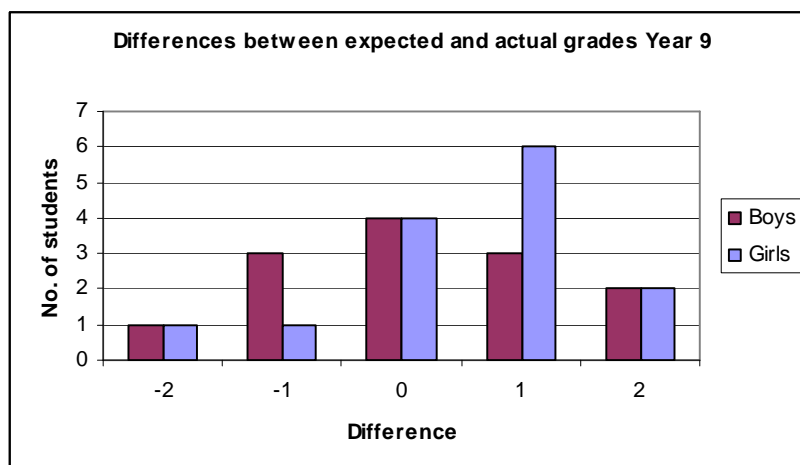


Figure 4.44 Distribution of results in comparison to expected grades, Year 9

4.6.3.2 Year 10

Students gave their views on assessment and learning as with Cycle 2. However, towards the end of the interview carried out with a group of the students broader issues were considered which encompassed views concerning the whole course.

Assessment

As with Year 9, minimal changes were made in the integration of assessment and learning within the classroom. As with Cycle 2, students generally felt that they had received a great deal of feedback on their learning (Figure 4.45) which continued to be comment based and as before was never submitted as a whole group (other than when externally assessed portfolio work was due). Both sexes felt that the level of feedback was high with no discernable sex bias.

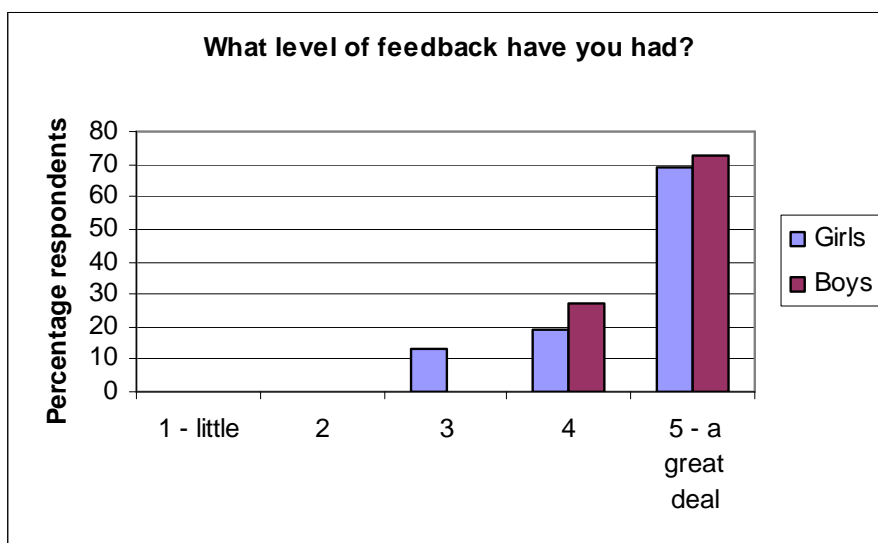


Figure 4.45 Students' perception of the level of feedback received in Cycle 3, Year 10

Given the formative focus of the feedback given to students both in written form and verbally in lessons, it was of little surprise that all students felt that the feedback was useful to them in developing their learning (Figure 4.46). In the open response element of the end of Cycle questionnaire students once again highlighted that they felt the feedback given to them focused on how they might improve their work, thereby including a clear element of feed forward, as well as emphasizing the positive elements of their work which had already been included. In a reflective diary, one student wrote that 'I managed to include all of the relevant information [for a piece of work on globalization] so none of my comments were negative – only constructive' (Girl A, Year 10).

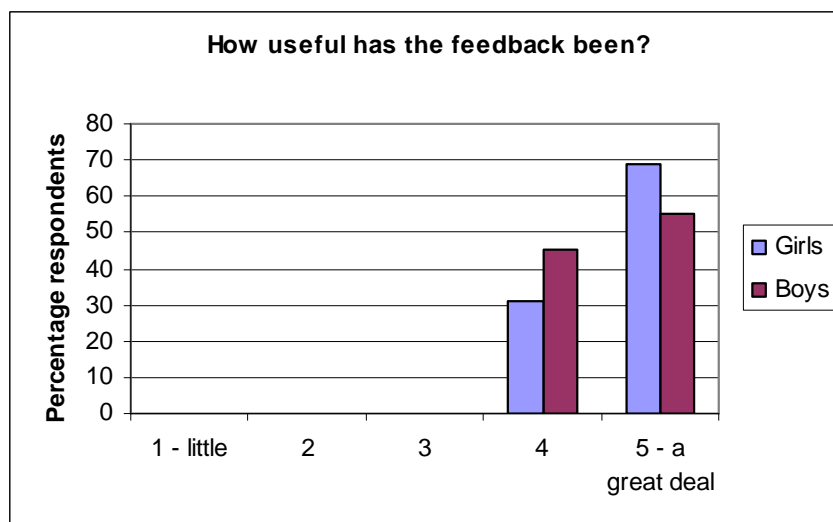


Figure 4.46 Utility of Feedback given to Year 10 students during Cycle 3

These views are supported by comments in the end of Cycle 3/year interview. One girl commented that ‘works quite well...lots of feedback which highlights how we can improve our work.’ (Girl A, Year 10), whilst the other girl in the interview stated that ‘And we get it back really quick as well. That’s really helpful as we can get on and not have to wait until the next lesson.’ (Girl B, Year 10). This second quote adds weight to the utility some students felt electronic feedback gave them as they did not have to wait until a subsequent lesson before moving forward with their learning.

The above evidence therefore seems to show that the students were positive in their opinions concerning the way in which feedback had been offered in Cycle 3. Students were also asked to consider the level of challenge presented by assessments during the year and also how different those assessments had been when compared to assessment in other subjects.

In the questionnaire filled in by the whole group a number of perspectives were strongly voiced concerning the experience of completing 'alternative' styles of assessment. A large number of students identified the enjoyable aspect of the assessments. They felt that the assessments were more clearly aligned with the learning they were being asked to do, for example, one response stated 'there is assessment and learning at the same time', whilst others mentioned the inclusion of creativity, variety and a strong sense of freedom in their assessments. However, whilst difficult to quantify, the girls appeared to be somewhat more positive than the boys, who whilst in general supportive and positive of the assessment regime, raise a more consistent series of issues which need to be considered. The need to access ICT regularly, the difficulties with working in groups for assessment purposes, and in one case, a clear personal preference for traditional forms of assessment were all issues raised by boys. This is reflected in some of the views put forward in the end of year interview. One boy stated when asked to consider the difference between taking examinations and completing portfolio work,

'Better done through an exam. Coursework seems more restrictive as you get a list of points which need to be included. I expand out but that is more for personal interest.....I've enjoyed that'.

(Boy A, Year 10)

Whereas the girls in the same interview were far more positive, one stating that 'I prefer portfolio work. In an exam that's it, but coursework you can really show what you understand.' (Girl B, Year 10). This was carried through when relating geography assessments to those in other subjects. The boy stated that 'much more coursework [in geography]...A lot less pressure. I would have done more exams.' (Boy A, Year 10), whereas the girls, in supporting their earlier statements again stated that 'It was good that portfolio work was in the lessons. And with

exams you only have like one shot at it. Found that the chance to improve meant I learned a lot more.’ (Girl A, Year 10).

The data from the questionnaire, interviews and diaries therefore suggests generally strong support for the development of assessment as part of the wider learning process, although some of the boys, whilst in a minority, appeared sceptical about the lack of traditional external assessment.

Learning

Cycle 3 focused on developing a greater level of structure to the Year 10 group’s learning whilst also retaining important opportunities for independent learning. As before the students were generally very positive concerning the extent to which they believed they had learned the work well (Figure 4.47). The results for the whole group were more positive than they had been in Cycle 2, although the girls still appear to be more confident than the boys in the degree to which they believe they have learned the work well. This is reflected in the interview comments made by some of the students. When asked how much they felt they had learned over the course of the year, the students were very positive.

‘We have definitely learned a lot, especially cultural and physical geography.’

(Boy A, Year 10)

One of the girls also stated that she felt the group had learned far more in geography than in their other subjects. Again, as with Year 9, the reasons given for this by the interview group were to do with the variety of approaches and the active media used.

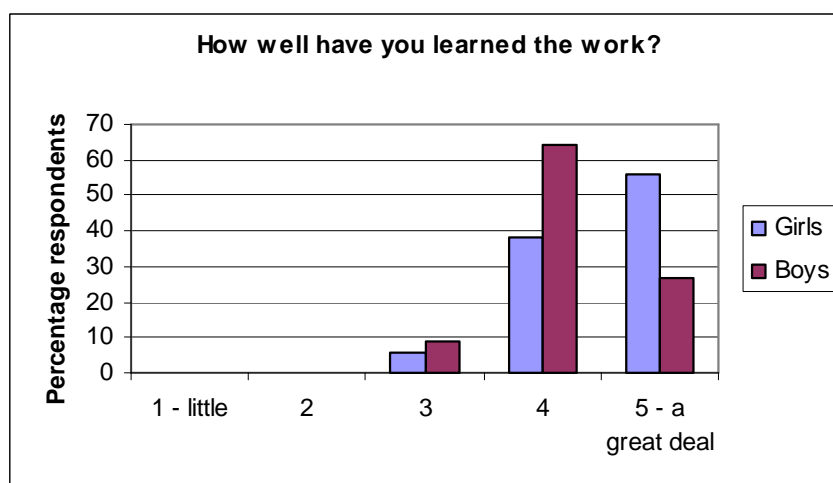


Figure 4.47 Students' perception of the level to which they understood the work
in Cycle 3, Year 10

When focusing on the particular issue of ICT, students were again generally very positive (Figure 4.48). However, the degree to which ICT was enjoyed dropped somewhat compared to Cycle 2, with only 32% of girls highlighting the top end of the choice scale compared to 72% in Cycle 2, with 54% of boys compared to 66% in Cycle 2. The open comments made in the questionnaire about the use of ICT were still generally positive, with factors such as the ease and speed of editing work and internet research being important factors. However, it may be that the managed decrease in the level of ICT work, linked to a development of other active learning approaches may have led to a perception that ICT, whilst enjoyable and useful, may not be the only way in which learning can be made to be interesting and fun.

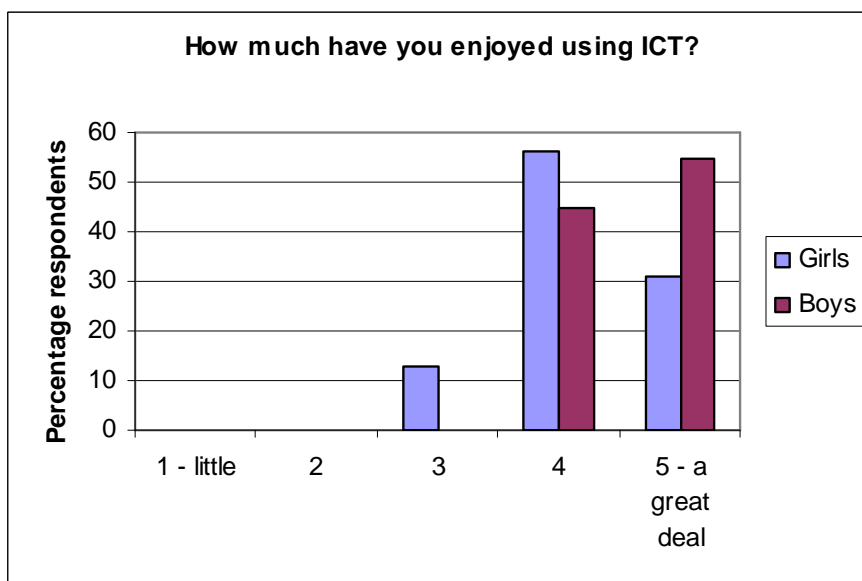


Figure 4.48 Students' perception of the degree to which they enjoyed the use of ICT in Cycle 3, Year 10

In gauging how independent students felt they had been in their work during Cycle 3, there was an identifiable decline in the percentage of girls who believed they had been very independent (Figure 4.49) when compared with Cycle 2, with 31% choosing a mid-category, compared to 0% in Cycle 2, although at the top end the results were similar, being 36% (Cycle 2), and 31% (Cycle 3). Interestingly the boys were relatively consistent in their perception of independence between the two Cycles, for example 27% (Cycle 3) as opposed to 22% (Cycle 2) for the highest level of independence. This suggests that the girls were more aware of the planned attempt to lessen the overall independence of the course, through greater levels of structure, whilst retaining a generally independent level of work.

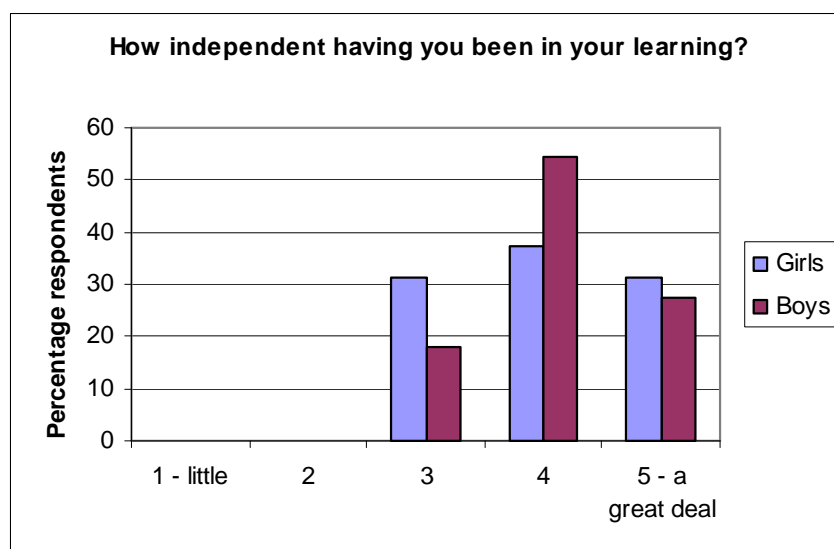


Figure 4.49 Students' perception of their level of independence in Cycle 3, Year 10

In the interview at the end of the Cycle, one boy commented that 'we got a lot of guidance, how and what to do, at the start....but then very independent for each piece of work.' (Boy B, Year 10).

Once again, the students had been given booklets for each of the units and again, they seem to have found their presence generally useful (Figure 4.50). This appears to be especially true of the boys, who were far more positive about the booklet than they had been when they had worked more independently in Cycle 2. In Cycle 2, 55% had found the booklet useful (categories 4 and 5), as opposed to 91% in Cycle 3. The only obvious change in their use had been a greater level of support in identifying and using elements of the booklets by myself during the lessons, especially in the cultural geography where fewer alternative sources of information existed. This might be suggestive of a process where boys are unwilling to spend time by themselves familiarizing and reading the booklets, but where they are directed they will use them. The girls counter this pattern, with 100% having found the booklets useful in Cycle 2 (categories 4 and

5), as compared with 75% in Cycle 3. In the end of Cycle interview this difference was clearly evident. One boy commented that ‘found them very useful as extra reference material to support what we were doing in lessons.’ (Boy B, Year 10), whereas the girls commented that ‘I used the fieldwork one a lot [Cycle 2], but the other one not so much ‘cause you gave us other things to look at.’ (Girl B, Year 10).

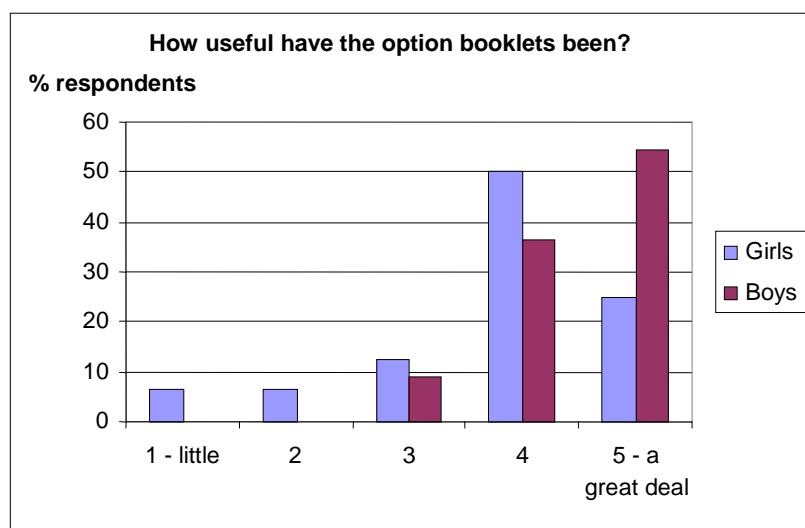


Figure 4.50 Students' perception of the utility of the options booklets in Cycle 3, Year 10

As with Cycle 2, students were asked to highlight the elements of the course they had most enjoyed. A number of students highlighted group work through their portfolio pieces in both cultural geography and the earlier field work option. Field work itself was once again emphasised by many, one student writing that ‘I felt like I’d achieved something’ (Girl, Year 10). Other ideas were essentially focused on the ‘collaborative’ nature of the course, with comments such as ‘I enjoyed the field work unit because it gave me a chance to hear other

people's views' (Boy, Year 10), and the multimedia portfolio piece from cultural geography, 'it was fun and gave me a different perspective on my work' (Girl, Year 10). There was also a feeling that the course, its assessment and the styles of learning used were relevant to the students, with comments such as 'cultural geography work, especially on the media because I can relate it to my life' (Girl, Year 10). In all cases, the enjoyment of the course appears to be the result of its active approach, the relevance of the materials and content, and the variation in assessment approaches and learning opportunities, together with the feeling that there is choice and hence a level of freedom, as one boy wrote 'Fieldwork – choice of what to focus on, don't get that normally'.

These sentiments were echoed in the end of Cycle interview. One of the boys commented that 'I really enjoyed the coastal work, because it was independent. I could develop the concepts and ideas at my own pace.' (Boy A, Year 10). The two girls present highlighted both group and fieldwork, one commenting that 'I enjoyed the Bourne Woods fieldwork [personally chosen topic and independently completed field trip] 'cause I find it easier to learn in groups... I learn more and better that way' (Girl A, Year 10). When asked which parts of the course they had not enjoyed over the course of the year, both girls said nothing, that they had enjoyed everything, and this came through as an important motivator. When asked what had motivated them to do well over the course of the year, the girls replied 'I've been very motivated because I've really enjoyed it' (Girl A, Year 10), the other adding 'Yeah, we've really enjoyed it.' (Girl B, Year 10). One of the boys was a little less positive. When asked which part of the course he had least enjoyed, he replied 'The presentation on the Pilotsville [cultural geography] in groups. I ended up doing a lot of the work. I enjoyed the content but not the medium.' (Boy B, Year 10). This

was perhaps related to his view on his motivation for the course 'My motivation has been to complete the work.' (Boy B, Year 10).

Finally, during the interview the students were asked if my role as teacher had been discernibly different from what they were used to either with myself, or with their other teachers. One interviewee stated that 'It's been very laissez-faire. There are the tasks you need to complete and rather than walking us through them stage by stage...telling us every five minutes what comes next, you've let us get on with it. It has been much better.' (Boy A, Year 10). This was supported by the other boy in the interview who commented that 'People have been able to ask for help and see you when they need it.' (Boy B, year 10), a point reiterated by one of the girls who said 'Means you've given more individual help when it is needed. Feeding back when we need it.' (Girl A, Year 10). As a consequence, there was a greater feeling of independence, 'Yeh, we've had more independence. It has motivated me more to get it done.' (Girl B, Year 10). As a consequence, all of the students characterised the approach taken as one where they felt that I was working alongside them as opposed to dictating from the front. Interestingly, whilst they all felt that this was a far better approach to learning, one interviewee did say that 'It wouldn't work in all subjects, 'cause of the subject or the teacher.' (Girl A, Year 10)

End of Course Results

As with Year 9, Year 10 results were analysed once they were available in August to supplement the perceptions of the students concerning the course they had followed. Overall, the results were mixed (Table 4.18). The boys, as a group, performed slightly worse than would be

expected from Fisher Family Trust predictions, and the girls did better, as a group attaining an average points score half a grade greater than expected.

	Expected grades*	Actual grades	Difference
Boys			
Average points	6.9	6.5	-0.4
Girls			
Average points	6.5	7.1	0.6

Table 4.18 End of Course Results for Year 10 by Sex

(* - expected grades those predicted by model D in Fisher Family Trust (grades calculated using top 25% of schools in the country); ** - values based on numeric scores taken from GCSE grades, G =1, F =2, etc)

The distribution of the numeric difference expected to actual grades can be seen in Figure 4.51 for the boys and girls. The boys show that there were no students above expected grade.

However, part of the explanation for this pattern is that a number of boys were predicted an A* and hence could not exceed their target. Only four students failed to meet their target, and none by more than one grade. The girls generally did very well. Again, the modal group being in line with expectation was in part a group of A* expected grades, whilst a skewed set of results towards the positive with only two girls doing less well than expected results in the half grade above expectation for the group altogether.

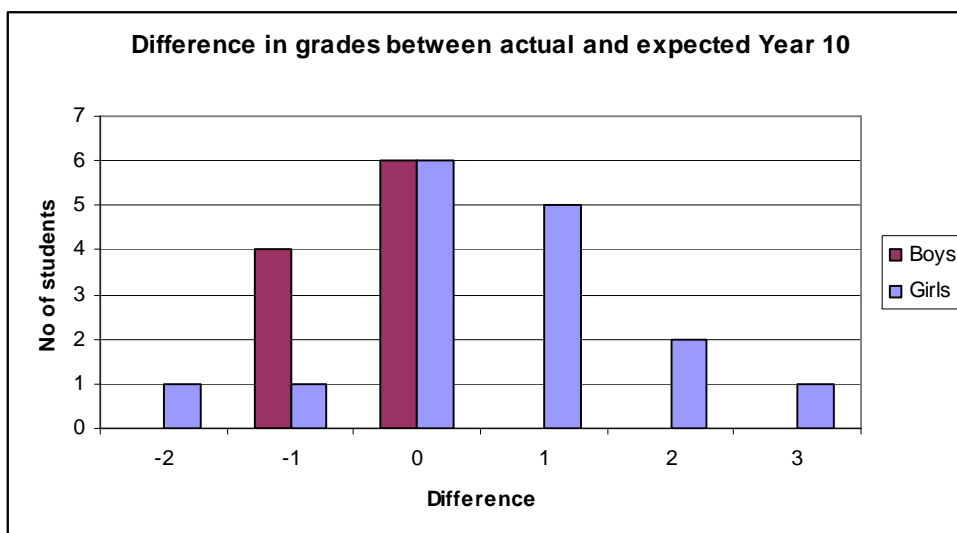


Figure 4.51 Distribution of results in comparison to expected grades, Year 10

Again, this does show a gender imbalance in results similar to that seen in the Year 9 results.

4.6.4 Discussion

The results from Cycle 3, similar to those from Cycle 2, demonstrate that the students in both years 9 and 10 were predominantly very positive about the way the course was structured and developed. In both learning groups, the end of year interviews highlighted the importance which students attached to the variety of learning approaches used over the course of the two action research Cycles. This level of variety seemed to be uncharacteristic when compared to other subjects taken by the students, but it was commented on in very positive terms. ICT was still considered to be an important element of learning, and in keeping with the results from Cycle 2, the potentially positive impacts of the use of technology as outlined by Hargreaves (2005) are again identifiable within student perceptions.

Year 9 saw a greater level of independence built in to their work during Cycle 3, identifiable as including both level 2 and level 3 elements of work as discussed by Betts (2004), before examining all the introduction of choice, and students as producers of knowledge as well as consumers. However, the majority of students showed that even though the increase in challenge was apparent, it was met with a willingness to investigate and experiment, a level of engagement which seemed not to be present in initial baseline results. Year 10 still maintained a high level of independence in their learning, but it was more structured. The introduction of booklets to support learning was seen as a positive development, and students realised that unlike normal textbooks, the booklets were intended to pose questions and to be used in conjunction with other resources thereby encouraging thinking and independence rather than reliance. The degree to which the learning had become personalised can be identified by the comments made by students concerning the level of choice within their learning and their ability to develop their studies at a range of different paces. Such a shift in the learning environment which these comments suggest emphasises a move from a more didactic approach to learning, to one based upon the work of Scardamalia and Bereiter (2006) and Stein (2005) showing a clear focus on active learning where the third generation of knowledge comes through the students' own interaction with the learning focus.

With regards to students' preferences in relation to learning approaches, it is clear that they have remained consistent with views expressed in the initial baseline data. Both year 9 and year 10 students show a strong preference for group based activities, projects and fieldwork. This relates strongly to enquiry led work as outlined by Roberts (2006), and also to the different approaches to fieldwork as outlined by Job (1996) as students were involved in a number of

different types of fieldwork over the course of the year. Another reason for the popularity of fieldwork appears to have been its immediacy and perceived relevance to the lives of the students involved, creating an invaluable bridge between the classroom and the students' life beyond school (Foskett, 1997).

Finally, in relation to the development of learning, both sets of students highlighted what they believed to be an altered role for myself as the teacher. In both cases the students identified that I spent far less time directing teaching and learning from the front of the room, instead taking the opportunity to introduce and develop major ideas which were then handed to the students for them to work with and develop. As a consequence of this, a number of comments were made which demonstrated my role as being more in keeping with that of a tutor who is involved in support and discussion with both individuals and small groups of students as and when required. Such a role can be associated with the intended characteristics of a teacher in Stenhouse's (1975) model of either education as process, or education as research.

The Cycle of three results focusing on assessment show a similar pattern to those found in Cycle 2. Once again the use of feed-forward (Torrance, 1993) and a developing dialogue (Crooks, 1988) are both highlighted by students as central elements of the feedback they received. It is certainly the case that students felt that assessment and learning were clearly aligned with one another (Broadfoot, 2007) and in a limited number of cases there is evidence that the two have become almost inseparable and are seen as facets of a single process. This identification of the merging of learning and assessment into a single process clearly relates to the principle of

assessment *as* learning where assessment is deeply embedded within activities undertaken and becomes an extension of learning (Dann, 2002).

Assessment appears to be seen in a very positive light, in part due to its close link to learning as stated above, but also due to the wide variety of assessment styles which is clearly a motivator for students. As with Cycle 2, this relates well to an interest in the inclusion of assessment of higher order thinking, problem solving and evaluation (Gipps, 1996), and the statement on page 67 by Resnick and Resnick (1992) that the inclusion of problem-solving, discussion and essays as assessment foci will encourage students to develop skills in such areas.

Finally, the use of e- feedback continued to be highly successful with the year 10 group, where students were able to make use of rapid feedback to develop their work unimpeded by the lesson timetable. There were a number of examples of students noting that they were able to react to feedback between lessons which helped them to extend their learning at points most convenient to them. The use of e- feedback was less successful with the year 9 group but this was due entirely to a concern that work would not reach its destination if e-mailed, physically handing in work providing an easily monitored process. As a consequence, whereas all those in year 10 continued to use e-feedback in Cycle 3, a number of students in year 9 reverted to submitting work in person.

The variety of assessment used across the two groups was generally identified as a positive strength of the course. However, in a minority of cases students (all boys) were less enthusiastic about the assessment regime of the course. These concerns were focused on a desire to see a greater use of external examination, and also a belief that the use of group work

as an element of formal assessment led to some individuals gaining higher marks than were warranted. The number of such comments were in a minority, but may in part explain the lower percentages of students feeling confident that they had learned the course content well.

Taking student comments concerning both learning and assessment at the end of Cycle 3, there is clear evidence that these elements of the emerging pedagogy demonstrate a co-constructivist model of teaching (Askew and Lodge, 2000, and see p. 71-72). Such an approach is in keeping with the emergent classroom model of Shepherd (2000), and the education as process/research model of Stenhouse (1975).

4.6.5 Conclusion

The results from Cycle 3 strongly suggest that there was a well embedded relationship between the elements of learning and assessment within the course. The quotes from students suggest that they were increasingly focused on the learning which was taking place within the classroom, as opposed to seeing the curriculum as an amassing of information for a distant terminal examination. Indeed, where work needed to be focused on external examination work, in Year 9, the students were clearly negative about its place in their learning.

The variety of approaches used are seen as a strength of the course, as is the degree to which students can choose both content (specifically in Year 10), and formats. This was possible due to the clearly symbiotic relationship between the learning framework given by the curriculum, and the wide ranging and authentic nature of the assessment regime. This led to the possibility

of embedding formative assessment deeply within the learning experience of the students, to the point where they began to see assessment as part of the learning process as opposed to being an appendage to it.

One element of the feedback from students which I find particularly interesting is the growing acceptance, even enjoyment, of structured, independent learning. This allowed students to develop their work in a challenging but supportive environment, and it appears that this was partly enabled by a change in teacher role from leader, perhaps even dictator, to facilitator and mentor. By working alongside and with the students, they had space to develop their learning at a pace suited to each individual. It is here, alongside the choices which the curriculum offered, and the deep embedding of formative assessment, that personalised approaches, and hence personalised learning were able to develop. Without this managed shift over the course of the year, to almost a form of classroom based 'self-supported study', it would have been difficult to engender such a personalised approach to learning. It must be admitted that this was not a positive experience for all students, particularly some of the boys in Year 9, who preferred to opt out of the challenge and alternative approach, finding security in the internet. However, for most students, the experience appears to have been very positive.

The pattern of attainment at the end of the year does raise some questions, however. The predominantly portfolio based approach of the course does appear to suit the girls more than the boys, although as explained earlier, the results are somewhat skewed in Year 10 due to a number of boys being expected to get an A*, resulting in no boy exceeding their target grade. This must be taken seriously, for whilst most boys were positive about their experience of the

course, a small minority made it clear that they preferred the notion of more examinations and less portfolio work. Although this should not act as a barrier to portfolio led assessment, it must be considered in making a course equally relevant and accessible to all.

Chapter 5 – Discussion and Conclusions

5.0 Introduction

The main research question which was the focus for the present research was:

‘To what extent can the Pilot GCSE in geography act as the basis for an emergent, active learning environment for students?’

From this main research question, three sub-research questions became the main focus for the research:

1. To what extent can learning, assessment and curriculum be developed to focus on active learning approaches?
2. What are students’ perceptions of a developing and reformed pedagogy?
3. To what extent does a reformed notion of classroom pedagogy allows students to deepen their investigation of geography?

Using a synthesised model of curriculum, learning and assessment (based on Stenhouse, 1975; and Shepard, 2000) a collaborative action research project (informed by myself and the students) was used to develop a learning environment informed by this model, but also reactive to student feedback. The following discussion focuses on the extent to which the three sub-research questions have been answered, before making a critical assessment of the synthesised model of curriculum, learning and assessment as a 'living-theory' model for the development and management of active learning environments.

5.1 To what extent can learning, assessment and curriculum be developed to focus on active learning approaches?

The synthesised model of curriculum, learning and assessment presented on page 92 and reproduced in Figure 5.1 is based upon the curriculum research of Stenhouse (1975) and the research carried out by Shepard (2000) which focuses on the place of assessment within the wider learning environment. The over-arching principles within this synthesised model are:

- a curriculum which is based on a belief in the need for higher order thinking, authentic learning which makes an explicit link between the formal learning which takes place in school with the informal learning which occurs beyond school. Such a curriculum naturally assumes that knowledge resides in both teachers and learners. In addition, to ensure that authenticity permeates all elements of the curriculum assessment is deemed to be an inherent element of the learning process;
- an approach to learning which emphasises social constructivism, seeing learning as shaped by prior knowledge, with active learners discovering and constructing their own knowledge which focuses on developing deep understanding. As a consequence of such a focus, metacognition must become a central element in learning;
- an approach to assessment which sees it as an integrated process with learning, highlighting the need to challenge students to think resulting in the need for a critical use of formative assessment;
- a teacher who sees their role as one which facilitates and critically develops learning, as well as leading where necessary at points within the course.

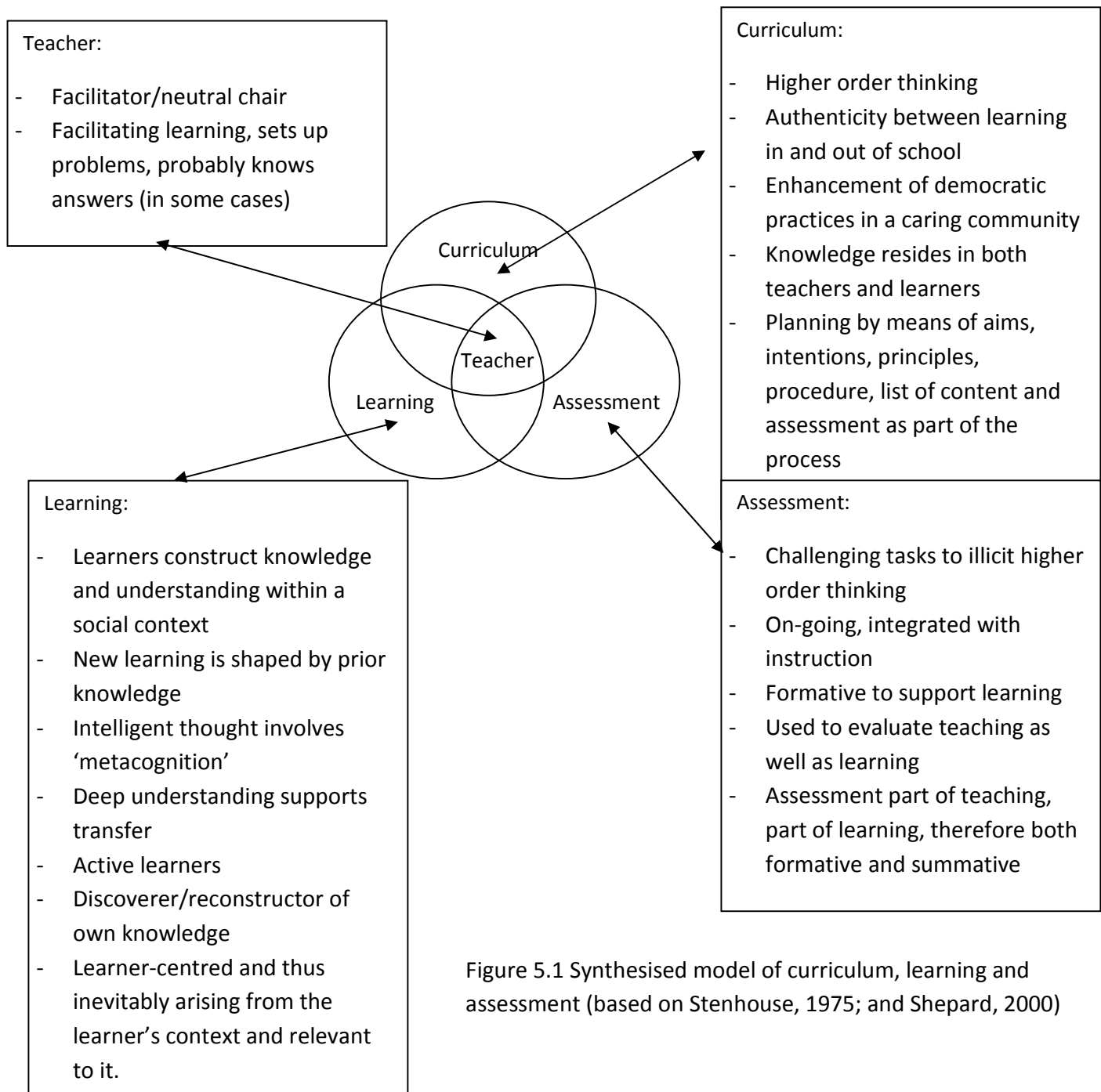


Figure 5.1 Synthesised model of curriculum, learning and assessment (based on Stenhouse, 1975; and Shepard, 2000)

The results from the three action research Cycles show a clear movement away from a more traditional, didactic approach to learning and teaching as characterised by the baseline data, to one which is centred on independent and active learning. This 'emergent' model challenged

students to develop their own understanding of the subject, supported by resources, formative assessment which focused as much on feed-forward as feedback, and individual support from the teacher. The resultant learning environment could be characterised as highly personalised (as discussed in section 5.4, p. 290). The experience of developing a learning environment based upon the synthesised model (Figure 5.1) clearly demonstrates that the synergy between curriculum, learning and assessment was in great part the result of a curriculum model which enshrined and enabled these approaches.

The Pilot GCSE, in facilitating an active, critical approach, led almost naturally to a constructivist approach to the subject. It is further argued here that curriculum, learning and assessment are linked elements which will tend to operate in synergy. This means that where a traditional, heavily content driven specification is developed in conjunction with traditional forms of assessment, dominated by traditional examinations based on mental recall and comprehension, there is a natural 'tendency' for the learning to be didactic and narrowly defined as it attempts to meet the requirements of the curriculum and assessment regimes. This is not to suggest that there is some form of 'immutable law' which makes such a system inevitable, but that the forces pulling between each element of the system make it more likely that such a dynamic will emerge. It is argued here that a content heavy curriculum (often with traditional content) linked to a narrow, traditional assessment format has tended to lead to a narrowing of GCSE learning experiences within geography.

The Pilot GCSE is more in keeping with the curriculum initiatives of the 1960s and 1970s with a focus on the relevance to, and experience of, students and a focus on interpretation,

evaluation, analysis and synthesis (Graves, 1975). From an early point in the development of the Pilot GCSE, the teachers involved in delivering the curriculum were also inherently involved in its development, again, very similar to the Schools Council initiative (Lawton, 1980).

The results, particularly from Cycles 2 and 3, demonstrate that it was possible to develop a learning environment which was based upon active learning where the activities were student driven leading to the students' own interaction with the learning focus (Scardamalia and Bereiter, 2006). As a result, students were able to develop their own understanding through an investigative approach rather than acting as passive recipients of information. Two examples of this shift in emphasis were an increased inclusion of field work to allow for direct experience and contextualisation, and the central role played by independent learning, often in the guise of enquiry based approaches (Roberts, 2006).

In the case of fieldwork, students were given different opportunities to experience a range of techniques and approaches. Using the framework developed by Job (1996), fieldwork included a number of emphases from quantitative to effective approaches, and activities which were generally teacher-led to more student-centred. For example, in the Core element of the course the year 9 students were given an opportunity to work by themselves on a diary of the use of their local area which became wholly student-centred and allowed each individual to determine the degree to which their study would be quantitative or more affective. In approach, this was very different to the more 'field excursion' led approach taken on the optional visit to the Lake District which was far more teacher led and was intended to exemplify, contextualise and consolidate learning developed in the classroom (Foskett, 1997). By using different approaches

to fieldwork a number of subject specific and more generic skills could be developed within the course (Foskett, 1997).

In both Cycles 2 and 3, students were very aware of the drive towards independent learning. This was achieved in large part by using elements of the enquiry based learning Cycle as proposed by Roberts (2006). Therefore, students were encouraged to generate questions to help them conduct research, to collect and present data and information and to analyse and interpret information gained to extend understanding. Much of this work was developed through introducing choice, and student-centred approaches which to a limited degree included negotiation of outcomes and processes for achieving them (Betts, 2004; Ecclestone, 2002). An additional element which aided an active and independent approach was the availability of ubiquitous ICT which appears from the results of this research to have had a positive impact on both engagement and motivation, and levels of independence in student learning (Hargreaves, 2005).

The final element which allowed for a more active and independent approach to learning was the role played by assessment throughout the course. By freeing the external assessment regime, allowing the extensive use of portfolio work leading to a spectrum of formats, assessment was both more authentic (Eisner, 1993) in nature and embedded within the learning process. As a result the course allowed for a 'learning paradigm' as opposed to a 'measurement paradigm' (Broadfoot, 2007) based on formative assessment in support of the process of learning, rather than a summative-led focus on testing and outcomes. The inclusion of a diverse and embedded assessment regime resulted in contextualised assessment, with

some comments from students suggesting that not only had assessment *for* learning been established, but in the optional units in year 10, assessment *as* learning (Dann, 2002) may have occurred.

The above discussion, strongly suggests that curriculum, learning and assessment can be used as a basis for developing active learning approaches. However, for this to occur it is vital that the curriculum is written in such a way that the content is relevant to the students and that it is not of such a volume that there is little time for investigation and enquiry. In association with an alternative view of the content to be included within the curriculum, it is also of central importance that the assessment regime allows for embedded and authentic assessment opportunities which are allowed to arise from the experience of the course itself. In this way, a spectrum of skills and understanding can be both assessed and developed, signalling the importance of a range of approaches and activities to students (Stein, 2005). The developing practice generated through the action research Cycles of this research therefore demonstrate that where the curriculum consciously enshrines the use of active learning approaches both through the exemplified content within the specification, but more importantly the assessment regime, such an approach becomes central to the development and compilation of the course.

5.2 What are student perceptions of a developing and re-formed pedagogy?

The perceptions of students regarding a re-formed pedagogy were on the whole extremely positive. The vast majority of students demonstrated a clear preference for active learning in the baseline assessment and subsequently throughout the action research Cycles. These

learning approaches were predicated on the student as 'meaning generator', both in individual and group, or socially, led work and were hence constructivist in character.

The students, regardless of sex or ability level, showed a strong preference for the use of ICT, project work and fieldwork. There is a clear sense from student responses that such approaches were seen as 'fun' and also engaged them far more than 'traditional' forms of learning, such as content focused writing exercises which were seen as a particularly negative learning medium. As a consequence, the students appeared to demonstrate a clear need to be affectively engaged by the work they were completing. The activities which were fun and showed a level of relevance engaged the learners and, therefore, appeared to establish a more positive image of the work to be covered. The results in Cycle 3 (Tables 4.17 and 4.18) also show that for many the course outcomes were positive. The ICT component of the students' learning met with a great deal of positive feedback where located within the classroom. The results from Cycle 1 which focused on developing the use of ICT away from the classroom, provoked a negative reaction to a degree, which at the time seemed almost paradoxical. However, by discussing the students' perceptions with them, it became apparent that the context of the ICT use was equally important to them as the ICT itself; whilst they liked the ICT component of learning, this cannot be taken in isolation, and must be considered in conjunction with other factors, in this case the impact of remote learning. The general patterns of reactions were that girls tended to demonstrate a dislike for the completion of such an exercise in a location where advice and support could not be given straight away. This may be due to some girls seeing any problem as a 'test' of their intelligence, rather than as an extra opportunity for learning (Dweck and Elliott, 1983, 1988), leading to what Dweck (2000) calls a helpless pattern of behaviour where

challenge is perceived as a problem rather than an opportunity. At the same time, the boys tended to be more willing to take risks, but disliked the notion of using their own time for the learning exercise.

As a result of this initial intervention, it became obvious that ICT was a learning approach to be developed in the classroom setting as opposed to using a virtual learning environment (Gillespie et al, 2007) or school website to facilitate distance components. Even here, however, care needed to be taken in ensuring that the general preference for ICT-based activities did not ultimately lead to a decline in the focus on learning. The year 9 boys initially worked well with ICT, but over time saw the opportunity for playing Internet games as more motivating than developing their understanding of the geographical issues which were under consideration. This may have been due to a decline in the novelty in using ICT. It therefore became apparent that it was crucial to target the use of ICT as closely as any other learning approach, and whilst using the Internet consistently for research purposes, to ensure that this was planned for carefully to make the most of the potential for e-learning.

Fieldwork was also popular. The fieldwork element undertaken by the students covered a number of approaches, focusing on whole class, small group and individual fieldwork.

Comments from the students suggest that where fieldwork was not teacher led, groups or individuals were able to explore and develop strands of learning by themselves. This approach gave them 'thinking space', or the chance to develop their own ideas. Such a thinking space allowed growing understanding of abstract geographical ideas as they became more concrete through individual sense making, as students were able to approach fieldwork in a number of

different ways (see Job, 1996). A developing understanding of geographical ideas seemed to be particularly relevant where students worked in groups during fieldwork, thereby developing the social learning aspect of the work. One element of the Pilot GCSE which was distinct from more mainstream specifications was the opportunity to allow students to focus fieldwork on personal experience. This enabled the development of more personal geographies, leading to positive student feedback concerning the opportunity to research themselves and their surroundings leading to additional relevance in their studies. This is an important starting point for the development of student understanding. As Bennetts (2005, p.114) states:

'... students bring to their lessons memories, knowledge, assumptions and beliefs, based on experiences outside of formal education, which can also influence strongly the development of their understanding.'

By integrating such experiences into the learning approaches used within the course, they gained an academic legitimacy which might not have otherwise developed.

Project work was also a popular element of learning. Much of the learning undertaken in the second year, being focused on portfolio work, was centred around the development of small projects and exercises focused on individual or group led research. As such, students again were challenged to develop their own 'meaning-making', using frameworks which I had developed to help scaffold their work. Students identified such activities as a challenging aspect of the work, but many students highlighted the positive opportunity this gave them to develop their learning, rather than exercises which were instigated and timed by me. As such, we developed a form of 'community of enquiry' (Lipman, 2003) where individuals and groups had the opportunity to play a central role in their own learning and act in support of each other to

develop learning together. The students, whilst very positive about this approach did, however, demonstrate that they preferred to have a clear and explicit scaffolding system in place. This was developed in the third Cycle with year 10 as it had become apparent that a very independent, enquiry approach in Cycle 2 had been difficult for some, who needed a greater degree of support and encouragement. ICT offered the opportunity for students to find, manipulate and develop understanding of geographical issues through internet based research, and even where this occurred at a level focused at the individual, such as internet-based research, students interacted both together and with the teacher to develop their understanding.

Patterns of confidence within learning were also interesting. In the baseline data at the start of the study, boys had reported generally higher levels of confidence about their learning, even where they had identified approaches to learning that they did not enjoy, results which were in line with those found for similar cohorts of students by Butt et al (2005). The girls across year and ability groups, reported lower levels of confidence in their learning. However, these results reflect the more traditional schemes of work followed by students before the introduction of the Pilot GCSEs. The boys in the action research groups, while still generally confident of their learning actually demonstrated a reversed pattern in comparison with the baseline data. Girls showed a high level of confidence when asked to complete independent research work, as long as there was ready availability of guidance. The year 10 boys found the less structured learning present in Cycle 2 problematic to a degree, some highlighting a desire to have a more structured approach to learning such as that developed in Cycle 3. As a consequence, the use of a greater degree of curriculum and learning structure in Cycle 3 in year 10, whilst retaining a

level of independent work, led to a very positive perception of the course across the sexes. The use of more active approaches to learning led all students to comment that they felt they had been both more independent in their learning and more challenged. The issue of increased responsibility for their own work was also identified in a positive sense, the higher levels of independence putting a greater onus on the students to take responsibility for their own work and time management for its completion.

Therefore, in summary there is strong evidence that students were very positive about a move towards themselves as active generators of learning within an active social environment, based upon a level of personal/critical autonomy and an identification of the cognitive, emotional and social by mentions of learning being seen as interconnected and equally important. These positive responses were also very much in keeping with views expressed at the baseline point in the research, and therefore suggest a deeply held student perspective on what constitutes good learning.

Students were equally as positive concerning changes in assessment. They showed a clear preference for forms of assessment other than written tests and essays within the baseline data, a pattern which mirrored their learning preferences. Examinations and tests were certainly seen as the least popular format for assessment. However whilst a spectrum of assessment types were preferred, the majority of students appeared to see the grades they obtained as the most important element of feedback. Comments were seen as important, and were sought, but were only of secondary importance to the grade itself, and this appeared to become more pronounced in the higher year groups, a pattern similar to that found by Butt et

al (2005). At the same time, there appears to be evidence of girls finding assessment stressful, and also considering it to be happening too often. Boys also identified assessments as stressful, and occurring too often, but their negativity towards assessments was less acute than that shown by the girls. Finally, formative development was not highlighted as a pronounced element of feedback and assessment, which clearly suggested that the students saw no clear link between assessment and learning and certainly did not see assessment as supporting the process of learning before the action research began.

The baseline data regarding student perceptions of assessment led me to develop challenging tasks, together with a central focus on addressing learning processes as well as learning outcomes, as discussed by Stenhouse (1975). The link between assessment and learning is in many ways synonymous with the notion of developing metacognition and reflection in student work. The main mode for developing this strand of thinking was the use of formative feedback as an integrated process used during teaching and learning by offering written comments on work. Feedback during the course was seen as formative by the students, and there are a host of statements about the types of comment included on work. These perceptions focused on the belief that supportive comments develop the learning of the students and in some cases through simple correction of factual inaccuracies. However, possibly one of the most interesting insights from students was the realisation that the inclusion of feedback in the form of questions led to the need for further thinking, therefore bringing a clear element of feed-forward (Torrance, 1993). In these cases, the questions did not give a direction prompt for corrections, or instructions for completion or alteration of work, but created a 'liminal learning space' (see Savin-Baden, 2008, who discusses this within a higher education context) where the

questions required the students to consider a challenge, or the highlighting of a possible issue or problem, without giving them the 'answer'. A number of students identified that the formative nature of the comments on their work clearly led to a greater generation of learning and also gave them confidence in attempting to work even where they were not completely sure. One interesting observation from the teacher's perspective was the initial negativity the students felt towards not receiving grades or marks (Black and Wiliam, 1998). However, over time this dissipated, and was replaced by a genuine interest amongst the majority of students to understand and engage with the development of their own learning. This led to a co-constructivist system (Askew and Lodge, 2000) with the feedback discourse working in synergy with the model of teaching, role of teacher and goals of teaching in the view of learning.

Students saw assessment in the Pilot GCSE as distinct from their experiences elsewhere. Choice in media, and the authentic character of the assessment were seen as particular to the course. Classroom assessments elsewhere were identified as textbook-based and exam led, whereas the Pilot allowed for a more holistic approach. The introduction of choice within some of the formal assessment was seen as very important to the students who characterised them as challenging, but enjoyable. From interview comments and questionnaire returns there is a strong sense that the students saw a clear alignment between the formative nature of most of the assessment undertaken and the resultant impact on learning (e.g. Girl B, Year 9, p.242). This was seen as occurring through the inclusion of variety, freedom and creativity.

The use of e-feedback generally proved a positive development in working with students. On the whole, the year nine students were more reticent about the use of e-mail for submission of

work. The main reasons for such anxiety appear to have been due to the chance that the work might not reach my e-mail account. By handing in a physical copy of work, some of this cohort of students felt happier that they had completed and submitted work and knew that it had reached me. In a sense, there was also less reason for the year 9 group to use this medium as work was more often handed in as a cohort rather than individually. However, once made optional in Cycle 3, the majority of students continued to submit work electronically. The year 10 students were far more positive about the use of electronic submission. Unlike the year 9 students, the students often submitting work at different times as they move forward with their portfolio work at different rates, and as a result there was perhaps a more genuine reason for using this medium. The students main reason for preferring this medium was the speed with which work was returned to them. On any one day, only two or three pieces of draft work would be submitted and could therefore be considered and fed back within 24 hours. The students saw this as aiding their learning as they could continue to develop their work further before the next lesson in many cases. As a result feedback and feed-forward was timely, formative, and fed straight into developing learning. This obviously only worked effectively if the students were committed, but in the majority of cases the introduction of electronic submission did appear to lead to an acceleration in the rate of learning.

Finally, considering student learning preferences voiced in the baseline data, constructivist approaches were built resulting on a focus on students building their understanding through independent and active approaches to learning. A constructivist learning environment also led to a clear indication that metacognition (or self-monitoring) was an important element within assessment and the development of students' work. The fostering of independence and

challenge is in line with the development of a learner differentiated curriculum and instruction as defined by Betts (2004), where students move from being the 'consumers' of knowledge to the 'producers'. The challenge given to students was seen in a positive light, perhaps due to the impact of consistent use of assessment for learning which led to a supportive environment in which it was expected that mistakes would be made, but where they would be considered and developed. The role of assessment was central to this process as was the change in my role as teacher. As a result, students gained in confidence within those elements of learning which are aligned to metacognition, namely planning, monitoring and evaluation of learning (Flavell, 1979). These metacognitive activities were ultimately developed by the students but supported by myself both in activity introductions and through ongoing feedback and feed-forward.

As with learning, the responses from students at the end of each of the Cycles of action research demonstrates positive perceptions of redeveloping classroom pedagogy, with particular focus on the students seeing feedback as a dialogue performed by loops connecting the participants, and also an expanded discourse involving a reciprocal process of talking about learning. These dialogues were made possible by the deep embedding of assessment within the wider learning process.

The students were generally not explicitly aware of the impact of curriculum on their work. The way in which the curriculum had been conceived led to the ability to develop challenging subject matter aimed at high order thinking. The curriculum also promoted equal opportunity for diverse learners in a number of ways. Most importantly there was the opportunity to use a wide spectrum of media with the students not only in general learning situations, but through

formal assessment. The Pilot's curriculum also allowed for the socialisation into the discourse and practices of geography as an academic discipline. Bennetts (2005) argues that any school level concentration of the subject, in this case geography, needs to be conscious of the particular conceptual frameworks which inform understanding. Whilst the detailed nature of the conceptual framework of geography remains contentious, a number of concepts (e.g. place, space and scale) are accepted as core ideas informing the discipline of geography (Matthews and Herbert, 2004), concepts which are foundational to the development of a deep understanding of the subject. By having such concepts infused throughout the course, there was a clear opportunity for the students to develop their understanding of the foundations of the subject.

The greater level of relevance of the course as a whole led to heightened authenticity in the relationship between learning in and out of school. The opportunities for students to study their local area and formalise and legitimise their own personal experience were seen as useful advantages by the students themselves. Some of the optional units of the course also allowed for the study of work, one student in a previous cohort outside of the research for the present study commenting that the planning unit he was completing was the first time in his school career that he felt he was doing something useful as he wanted to be a builder and the course was actually teaching him something which would have a utility beyond his direct school experience.

Given the above discussion concerning students' experience and perceptions of the Pilot GCSE, it appears clear that students were overwhelmingly positive about the emerging and reformed

pedagogy which was developed over the course of the study period. In many ways this is unsurprising as the general thrust of developments were in keeping with the views expressed in the baseline elements of the research programme. In this sense, it might be argued that the Pilot GCSE specification was the variable which had changed (in comparison to the past mainstream specifications) thereby allowing an official course to come more into line with students' views of learning and also allowing greater synergy between a developing learning environments and many of the educational research ideas used to inform the theoretical basis for this research (e.g. Stenhouse, 1975; Shepard, 2000; Askew and Lodge, 2000; Broadfoot, 2000; Ecclestone, 2002).

5.3 To what extent does a reformed notion of classroom pedagogy allow students to deepen their investigation of geography?

In many ways, this particular research question is the most difficult to answer, as much of the research data collected over the course of the year was perceptual and qualitative in nature. However, there are a number of pieces of evidence which give a strong circumstantial basis for claiming that the emergent classroom pedagogy developed over the course of the action research period allowed students to deepen their investigation of geography as a subject.

The second year of the Pilot course was focused on the compilation of only two units. This meant that students had far more time to consider and develop their understanding of the elements of the subject which they had chosen to study. By allowing a degree of student choice through offering two units in each half year, it was possible to foster a greater level of intrinsic

motivation as students were able to decide the area of study which most appealed to them. In all cases the use of a unit booklet (appendices 13 and 14) covered the same content areas which would normally be associated with GCSE level work, but extended beyond this level in two important respects. Firstly, the booklets tended to cover a greater breadth of content than might be expected in a standard GCSE textbook. For example, the fieldwork booklet not only considered fieldwork techniques and basic sampling methods, as might be expected within most mainstream GCSE textbooks, but also considered the historical background to fieldwork, introduced differences between quantitative and qualitative approaches to data collection and also made the enquiry Cycle framework for research explicit. Secondly, all booklets made a number of explicit links to other resources, especially those on the internet, and posed a series of wider ranging questions for the consideration of students. In the results at the end of Cycle 3, a number of students commented on the way that they had used the booklets highlighting that they had been useful as a starting point, but that the references to other resources and the inclusion of regular questions and thought bubbles had encouraged them to expand their thinking and their resultant work beyond these core resources. As such, students were encouraged to deepen their understanding and investigation of the subject.

An explicit interest in developing notions of personalised learning (Milliband, 2004), particularly through the enhancement of independent learning and assessment for learning, allowed students to develop their learning at different rates, allowing some students to develop more rapidly than others. In one notable case, this led to an individual student being able to extend their learning of the subject beyond that specified within the course. In this example, a student who had completed the specified coastal portfolio work three weeks before it was intended to

move on to the second optional module in year 10, developed his understanding of temporal changes in sea-level and the impact that such a process has upon coastal environments. There were also several anecdotal examples of students completing the cultural geography unit reading fiction books (one example being *Jennifer Government* (Barry, 2004), a science-fiction book considering impacts of globalisation on culture) which were mentioned in the unit booklet, but which were not explicit elements of the course.

The above are qualitative examples of ways in which the developing pedagogy encouraged and enabled students to deepen their investigation of the subject, as they were given the opportunity to expand their understanding, as opposed to being constrained by a narrowly planned and didactically delivered specification. Perhaps the most telling comments made by students concerning their depth of learning are those from both Cycles 2 and 3 which characterised the course as making students think, and in one case being seen as resulting in 'almost too much learning'.

5.4 Conclusions

The initial research questions for this study were:

1. To what extent can learning, assessment and curriculum be developed to focus on active learning approaches?
2. What are student perceptions of a developing and reformed pedagogy?

3. To what extent does a reformed notion of classroom pedagogy allow students to deepen their investigation of geography?

The results and discussion from the present research strongly suggest that at GCSE level it is possible to develop active learning approaches. From past personal experience this is possible, but extremely difficult where traditional curricula and assessment regimes exist. However, the Pilot GCSE offered a very different model of both curriculum and assessment. The curriculum retained a focus on content, but allied this to a more explicit consideration of underlying geographical concepts. The content was also developed to include a greater level of relevance to the students. Directly linked to this was the use of an extended spectrum of assessment media which were authentic (Eisner, 1993) and embedded into learning far more than any traditional assessment regime at GCSE. As a consequence of these characteristics, a synergy existed between the components of classroom experience (i.e. curriculum, learning and assessment), resulting in an environment where active learning became the norm. This suggests a learning environment which was located within the *education as process* and *education as research* traditions as developed by Stenhouse (1975).

The results of the research presented here strongly suggest that the reformed pedagogy which emerged over the course of the year of action research was positively received by students in both groups. Reflections at points during the year, and particularly at the end of the year, show that the students felt challenged by the work, but that they also found it both relevant to them and enjoyable. Indeed, they were clear that they had learned a great deal during the year, the result of consistent and constant feedback and dialogue at a personal level, a curriculum which

pushed them to become increasingly able to cope with independent learning, and which gave them time to understand as well as gain knowledge; a result of the social constructivist approach to learning and curriculum.

Perhaps one of the most important outcomes of the present research in the development and experience of me as the lead researcher was the developing understanding of the critical link between theory and practice. Whitehead (2008, 2009) outlines the role which action research can play in developing living theories which he defines as:

'.....an explanation produced by an individual for their educational influence in their own learning, in the learning of others and in the learning of the social formation in which they live and work.'

Whitehead (2008, p.104)

Whitehead sees theory as being a developing expression and understanding of reflection on evolving practice. This leads to a distinction between the notion of *education research* and *educational research*. Whitehead (2008) argues that *education research* is that carried out from the perspective of fields of education, for example, sociology of education or policy and leadership of education. *Educational research* however, is understood as the 'creation and legitimisation of valid forms of educational theory and knowledge that can explain the educational influences of individuals in their own learning, in the learning of others and in the learning of the social formations in which we live and work' (Whitehead, 2008, p. 105). In the case of the current research, the main focus has been on developing a pedagogy which is informed by my own experiences and beliefs as a teacher, and the beliefs of students as laid out in both the baseline data collected at the start of the research period and at subsequent

points during the action research. Consequently the initial conceptual model of curriculum, learning and assessment was based upon a combination of these experiences and beliefs, and wider education research which provided a foundation for developing practice within the classroom, resulting in a 'living theory' concerning positive, learner orientated learning environments. As such, the degree to which any theoretical consideration can move beyond the personal or communal is doubtful, however it may act as a starting point for further and wider discussion (see 5.5 further research for further consideration). Within the communal context of myself and the students with whom I was working however, the results and emergent model of a progressive learning environment acts as a practical basis for a form of personalised learning, in other words giving a concrete substance to a more theoretical and general set of ideas as outlined in chapter 2.

The National College for School Leadership claim that personalised learning is a social constructivist concept (Carter and Franey, 2004) that there is no single approach and framework which must be added to and, as such, there is no 'correct' way of defining and developing it. As a result, the learning environment which was fostered in this study cannot be said to relate to personalised learning in a predefined correct way. However, by comparing the environment which was developed in the present study with the frameworks developed by Milliband (2004), Hargreaves (2004, a and b) and Gilbert (2006), the degree to which the present work can be said to provide a personalised learning approach can be discussed.

As set out earlier in this work, there have been three major accounts as to the elements which construct a personalised learning approach in education (Milliband, 2004; Hargreaves 2004a,b;

Gilbert, 2006). At the classroom level, there are a number of common strands present in all of the suggested models, namely:

- assessment for learning
- the use of ICT to support learning
- learning orientated classrooms where students take responsibility for their learning (especially emphasised by Gilbert, 2006)
- student voice and curriculum choice

Whilst there are a number of other elements highlighted for the development of personalised learning, they occur at the level of the organisation beyond and are therefore not considered here.

There is clear evidence for the development of a central role for assessment for learning throughout the action research Cycles. At the point of baseline data collection students appeared to be focused on grades and felt that there was little use of assessment to inform future development. However, at the end of each action research Cycle it is clearly apparent that the emphasis in the classroom had shifted and focused heavily on the process of learning, including the development of feed-forward (Torrance, 1993) and comment only marking (Butler, 1988; Black and Wiliam, 1998). The students highlighted the impact this had on their learning as they felt that the developing dialogue between themselves and me as the teacher aided their development throughout the course. This demonstrates that in this sense, the learning environment developed during the research period did foster a personalised approach.

ICT has also played a major role in supporting and augmenting learning. This occurred in three main ways. Firstly, ICT was used as a platform for presenting learning materials, and allowing for individual research. The clearest example of this was the inclusion of a research-based website developed in action research Cycle one focusing on tourism. This allowed students to continue their learning beyond the classroom, but included different levels of work, thus ensuring a level of differentiation for students aiding their development in completing research on the Internet. Secondly, the assessment regime of the Pilot GCSE course allowed for students to present externally assessed material in an ICT format, for example a multi-media installation completed by those undertaking the cultural geography unit. This meant that the ICT component of the course could be fully integrated, not only as a learning tool but as an assessment tool as well, giving it a greater level of authenticity. Finally, ICT was also central to the formative assessment framework developed during the research period, through the use of e-submission and feedback. The main positive outcome of this development as identified by the students was the flexibility that it gave to their studies and learning.

One of the most pleasing outcomes of the research here, as presented by students in their feedback throughout the process, with the clear focus of the course on learning as a process. The development of formative assessment, together with an emphasis on independent and collaborative learning, led students to state that the course was challenging, but made them think, take responsibility and led them to identify that they felt they had learned a great deal. The richness of the learning environment was seen as different to many of their other subjects which they characterised as heavily textbook focused and predominantly written led. This

shows that a learning orientated environment where students took responsibility for their learning was developed.

Finally, there was, as far as was practicable, a strong element of student voice and choice. Students were able to make a conscious choice of content to be followed in the second part of the course by deciding between different optional units. Also, a developed formative assessment system allowed students to be involved in a far clearer and more detailed dialogue about their learning, which can be argued to be a form of student voice, and the feedback was not given as a 'present' but was developed as a mutual discussion about individual learning (see Askew and Lodge, 2000).

Figure 5.2 acts as a final conceptual framework which marries together the emergent theoretical model of teacher, curriculum, learning and assessment as outlined in figure 2.8 (page 92) and the main findings from the perceptions of students themselves gathered over the course of the three action research Cycles. This is a diagrammatic representation of the 'living theory' developed by myself and the students with whom I was learning, based upon our beliefs and experiences of generating new ways of learning allowed by an alternative curriculum philosophy.

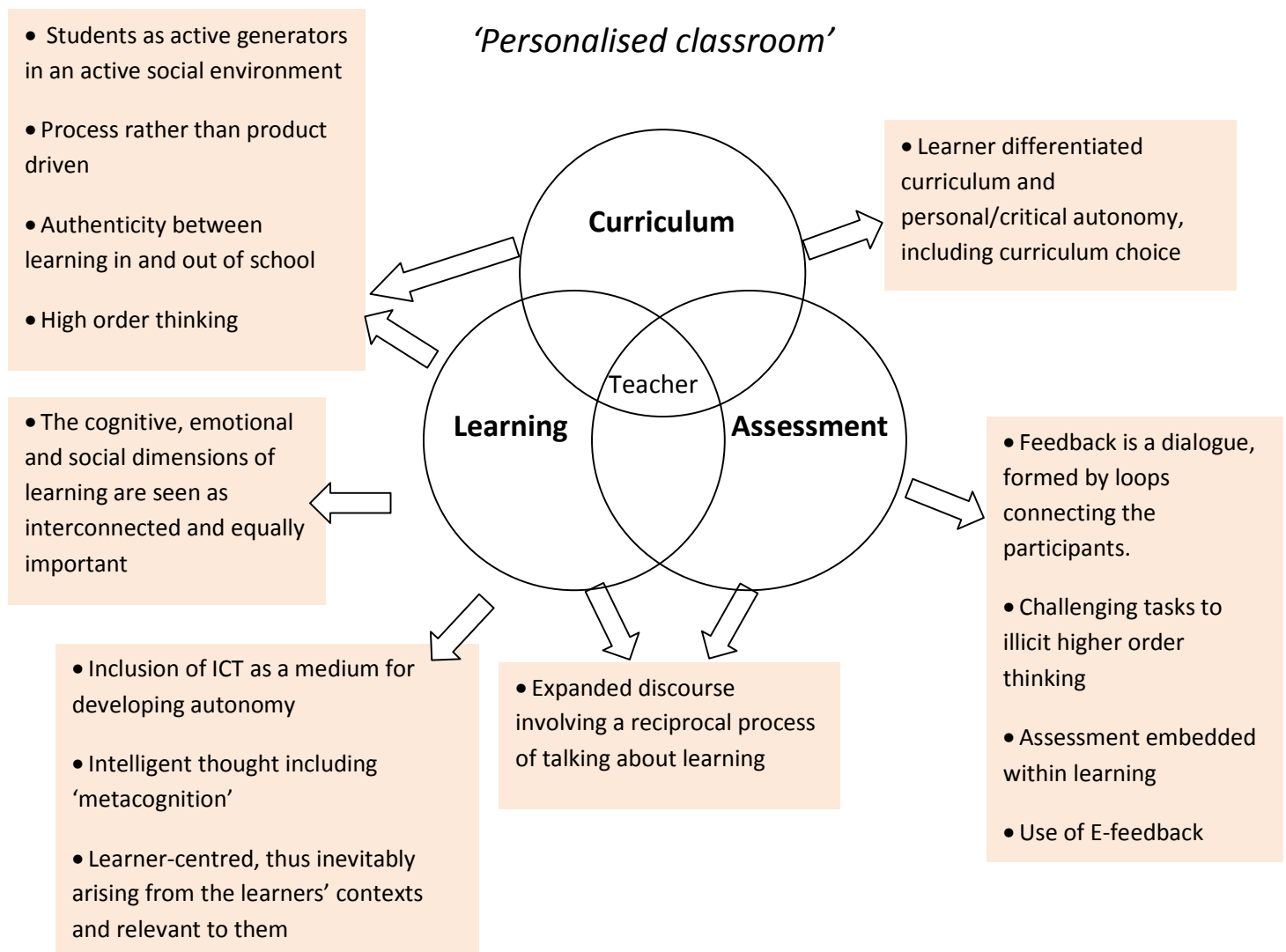
'Personalised classroom'

Figure 5.2 Conceptual framework merging the synthesised curriculum/learning/assessment model (p.92 based on Stenhouse, 1975, Shepard, 2000) and main results from the action research cycles

5.5 Future Research

The present research is necessarily small-scale and speculative, working towards a 'living theory' which explains and acts as a basis for further pedagogical development within the particular context of myself and the learners with whom I worked. As a consequence, future

research should in part focus on using this emergent methodological approach as the basis for working with other groups of teachers to empower and enable them to evolve such 'living theories' within their own contexts. By developing teaching networks in this manner, it may be possible to develop more generalised and deepening understanding of the holistic nature of the interplay between the teacher, curriculum, learning and assessment.

As a focused element of this generalisation, a deep consideration of the learning process evident in the work of students and teachers might be possible. The field of learning theory is already crowded and complex with a number of different perspectives and methodological approaches pursued. However, the overarching synthesis of Illeris (2008) offers a possible conceptual framework on which to take such work forward, highlighting the importance of cognitive, social, affective and developmental elements to the learning of individuals. It should be possible to use such an approach to inform the analysis of the learning of groups and students.

One outcome from the present research, not discussed above, was the developing frustration I felt in working with students as the classroom restricted the variety of ways in which we could work. This frustration was due to a feeling that the provision of a 'standard' classroom was actually restrictive of the development of the learning taking place within it. This results in a potential interest to critically consider the links between learning, curriculum and space, an area which is already gaining the interest of educational researchers (Savin-Baden, 2008, focusing on learning spaces in higher education), and architects (Hertzberger, 2008; Taylor, 2009). However, there is little work considering the areas of cross-over between these two

research traditions, with educationalists tending to consider aspects relating to learning whilst architects remain focused on design, with only passing consideration and understanding of the educational issues at the heart of learning space design. By developing a possible conceptual framework for the understanding of the links between curriculum, learning and assessment, it should be possible to contextualise this in relation to the spaces (physical, cognitive and affective) which laid the basis for interaction and learning between students and teachers. An extension of this consideration is the increasingly important part played by ICT within learning environments. This has led to a consideration of *ubiquitous learning* (Cope and Kalantzis, 2009) which identifies the wide spectrum of technology-based information retrieval and use as being an emerging focus for wider issues of learning. The rise of ubiquitous learning would lead to a constantly changing dynamic between teachers, curriculum, learning and assessment and the spaces in which they occur.

It is by asking and investigating the above questions that we can begin to understand what 'personalised learning' might mean and how it might evolve.

5.6 Evaluation of the research undertaken

The research presented here offers some possible conceptual frameworks and a case study of how practice in a given instance was developed in an attempt to realise a more personalised and learning centred environment. However, it is also recognised that it is not possible, as with all action research, to generalise beyond these 'signposts'. Action research is highly contextualised, and can only offer an insight into development within that context. The

research attempts to capture the complex dynamics of an evolving classroom environment and is therefore, of necessity, partial. The lack of a 'control group' leads to questions of the impact of other variables not considered within the present study. One example of this is the role and impact of the teacher and my pre-existing relationships with the students. Is it the case that the learning approaches developed were successful because of the particular beliefs and attributes brought to the research by me, and the impact that prior experience of such approaches had amongst the student cohort? This is obviously not possible to capture in an easy way, and is beyond the bounds of such a study. However, the broader based development of the resultant conceptual structures suggested as a development of this research would allow for the interrogation of such issues.

5.7 Concluding remarks

The present research has focused on the extent to which it is possible to develop a personalised learning environment within a GCSE Geography classroom. Through a critical consideration of the literature on personalised learning, curriculum development in geography, and assessment, it is believed that the framework of Shepard (2000) offers a potentially positive basis for a conceptualisation of a personalised approach to learning. This is based on a curriculum which enshrines the opportunity for exploratory learning in part focused on relevant topics for the students. It also depends on a wider conceptualisation of the role and format of both formative and summative assessment. Summative assessment needs to be authentic, and some of the temporal barriers between summative and formative uses of assessment need to be broken

down, allowing for the inclusion of both at the same time (Newton, 2007). It is suggested here, that where such a curriculum and assessment regime exist, there is a greater natural propensity to encourage active, independent learning by students. As such, the conceptual framework offered in Figure 5.2 summarises the main characteristics of a resultant personalised learning framework based on Shepard (2000) as a starting point and integrating the results of my research. This model is somewhat at odds with recent developments in national (English) curriculum review, such as the new GCSEs and A-level specifications. As such, I believe that there is much to be considered and changed before geography specifications and the assessment regimes they outline are in synergy with the critical conceptualisation of personalised learning as offered here. By stepping back into a narrow assessment regime, predominantly based on external examinations, and aligning this with a content focused specification brief, there appears to be far less potential for fostering independent learners and creative classrooms. Pring et al (2009) have recently concluded in a major review for the Nuffield Foundation, that there needs to be a reconsideration of the role and focus of the curriculum and the part which learning and assessment play within this should be again reconsidered. It is hoped that the present work might add in some small way to this ongoing debate.

**Appendix 1 – Questionnaire focusing on student perceptions of
geography**

**Appendix 2 - Questionnaire focusing on student perceptions of
assessment**

QUESTIONNAIRE ON ASSESSMENT

Please spend a few minutes filling in this questionnaire by ticking your chosen answer in each case.

Thank you

1. Are you

Female ☐

Male ☐

2. What year group are you in?

Year 7 ☐

Year 9 ☐

Year 11 ☐

3. Which colour group are you in for English, languages and humanities (*Years 7 and 9 only*)?

Red ☐

Blue ☐

Green ☐

4. In which of the following ways are you assessed in school at present (*tick as many boxes as you like*)

Exams ☐

Coursework ☐

Presentations ☐

Orals ☐

Group activities ☐

Essays ☐

Other (please describe) ☐ _____

5. Which of the above methods do you like to be assessed by (*list below*)

6. Why do you prefer these ways of being assessed? _____

7. On a scale of one to five how much effort do you feel you put into your assessments?

1 2 3 4 5 (1= not much, 5= a lot)

8. Once you have finished an assessment and it has been marked, what do you feel would be the most valuable piece of information the teacher could put on your work?

Comment ☐ Mark ☐

Percentage ☐ Grade ☐

Comment & target for further work ☐

Other (please describe): ☐ _____

9. From the words and phrases below, circle five that best describe/explain your view of assessments in school.

Help me learn	They happen too often	Hate them
Motivate me		Make me feel bad
They de-motivate me	Challenge	Help me understand
Stress	I can show what I can do	
I always do badly	Makes me think	Pressure
Feedback is useful	Can see where to go next	
I can't show what I know I can do		

Thanks for your time

Appendix 3 – End of Cycle 1 questionnaire

Website Exercise Student Questionnaire

Group:

Gender: Male / Female

	Strongly Agree		Neither		Strongly disagree
1. I enjoyed doing school work on the 'net	1	2	3	4	5
2. The work was easier to understand than when working in the classroom	1	2	3	4	5
3. The work completed was more accessible	1	2	3	4	5
4. I was more motivated in doing this work	1	2	3	4	5
5. The answers were easier to find than when working in a textbook in school	1	2	3	4	5
6. I liked the fact that the three exercises were provided at different levels of difficulty	1	2	3	4	5
7. The website and information was detailed enough	1	2	3	4	5
8. I would like to do more work like this	1	2	3	4	5
9. I prefer the independence that this type of exercise provides	1	2	3	4	5
10. This exercise has helped me develop better computer skills	1	2	3	4	5

11. What did you like about the exercise?

12. What could be improved?

Appendix 4 – Questionnaire used at the end of Cycles 2 & 3

Development of the Pilot GCSE

Please complete the questionnaire below. This is intended to help develop the way that the course is delivered by gaining your thoughts on what works and what doesn't.

Thanks

Underline your response to each of the following questions

Year group: 9 10 11

Year of course: Core Options

Gender: Male Female

	A little				A great deal
How well do you think you have learned the work?	1	2	3	4	5
How much help have you received in completing your work?	1	2	3	4	5
What level of feedback have you had in completing your work?	1	2	3	4	5
How useful has this feedback been?	1	2	3	4	5
How much have you enjoyed using ICT in producing your work?	1	2	3	4	5
How independent have you been in completing work?	1	2	3	4	5
How challenging have you found the work?	1	2	3	4	5
How useful have you found the small 'text-booklet' which was given to you? Options year only	1	2	3	4	5
How useful have you found e-feedback (i.e. sending work by e-mail)?	1	2	3	4	5
Has there been an assumption that everyone can succeed?	1	2	3	4	5

Please write some short answers to the following questions

Briefly describe the focus of the feedback you have received on work this year?

How has your use of ICT affected your learning?

What format do you prefer to submit work in (electronic or physical) and why?

Next term, how would you like to give in work?

Are you challenged to do your best? Either way, how has this affected your learning?

Who do you turn to help from when you are unsure about how to proceed with your work?

Is there anything else which we could do which would help you learn better and more rapidly?


Appendix 5 – Parental consent letter for taking part in questionnaires

Dear Parent/Guardian,

I am currently developing a small scale study focusing on the development of personalised learning to aid the encouragement of independent learning traits within geography students.

I would like to complete two questionnaires with your son/daughter as part of this research to gain their views on geography and assessment.

Any views expressed would be given in confidence, and any quotes used would be anonymised. I hope that the information gained will act as both a starting point for further development of my research and material for academic publication.

If you are willing for me to use the questionnaires with your son/daughter would you please sign below. If you would like to ask any questions concerning this process please feel free to contact me at 

Yours faithfully,

Dr Phil Wood
Geography Department



Signature:

Date:

Print name:

Student signature:

Date:

Print name:

**Appendix 6 – Parental consent letter for taking part in keeping
reflective diaries**

Dear Parent/Guardian,

I am currently carrying out some small scale research focusing on the development of a Pilot GCSE in Geography to help advance independent learning traits within the students.

I would like to offer your son/daughter the opportunity to keep a reflective diary about their opinion on the course they are following and also reflecting on their learning in geography.

Any views expressed would be given in confidence, and any quotes used would be anonymised. I hope that the information gained will act as both a starting point for further development of this learning activity and material for academic publication.

If you are willing for me to invite your son/daughter to keep a reflective diary would you please sign below. If you would like to ask any questions concerning this process please feel free to contact me at [REDACTED]

Yours faithfully,

Dr Phil Wood
Geography Department



Signature:

Date:

Print name:

Student signature:

Date:

Print name:

Appendix 7 – Parental consent letter for taking part in interviews

Dear Parent/Guardian,

I am currently carrying out some small scale research focusing on the development of a Pilot GCSE in Geography to help advance independent learning traits within the students.

I would like to offer your son/daughter the opportunity to be involved in a small number of interviews over the course of the current academic year, focusing on the course they are following and also reflecting on their learning in geography.

Any views expressed would be given in confidence, and any quotes used would be anonymised. I hope that the information gained will act as both a starting point for further development of this learning activity and material for academic publication.

If you are willing for me to invite your son/daughter to be involved in the interviews would you please sign below. If you would like to ask any questions concerning this process please feel free to contact me at [REDACTED]

Yours faithfully,

Dr Phil Wood
Geography Department



Signature:

Date:

Print name:

Student signature:

Date:

Print name:

Appendix 8 – My Place Scheme of Work

MY PLACE

Differentiation cannot be outlined in detail ahead of time. Individual colleagues should meet the needs of students as they occur. Because of the rich entitlement and approach, specific guidance cannot be given.

Number of lessons	Outcomes	Guidance	Enquiry Questions	Learning and teaching ideas	Variety
3	Define and explain your own understanding of what constitutes your own place.	Students' personal geographies	What is my place? Where is it? How do I feel about it?	Listen to 'Strawberry Fields' and 'Penny Lane'. Deconstruct what they say to help understand what the Beatles thought about their home area. HmWk <i>Write a poem or a set of lyrics about your home area.</i> Give out maps of the Deepings area in middle of A3 sheet, and ask students to draw a line delimiting their local area. Why have they chosen this area? What is it that they use the local area for? Ideas annotating/around the map.	Musical Linguistic Visual Intrapersonal Interpersonal
4	Understand and be able to articulate basic economic, environmental, social and political features of the area	Specific features of the environmental & economic, social, political geography of the area.	Why is this place as it is?	In the computer room, log onto the National statistics website. Give out crib sheet that has selected data for central London. Students need to find the data for the Deepings and fill in sheet. Discuss patterns and why they are as they are. Then complete a publisher leaflet outlining/explaining the characteristics of the local area.	Linguistic Intrapersonal Visual Interpersonal
3	Understand that other people and organisations hold different views and values about their local place.	Geographies of the local area.	How is this place seen, represented and experienced by others.	Brainstorm how students use their local area, and how they feel about the place they live in. Summarise ideas. Then try to see how other groups feel about the area – middle aged professionals, OAPs, and unemployed. How might students come into conflict with these groups?	Interpersonal Linguistic Intrapersonal
2	Understand that geographical	Identification of places at	How do different geographical	Give students the list of place names and images (and ask them to identify). They should then write/stick the locations in the different scales local ↔ global. Use a local service, such as a garage and develop a	Visual Intrapersonal Interpersonal Linguistic

	processes occur at different scales	different scales	scales interact?	mind map to show the links with the rest of the world. Include a discussion introducing the principle of spheres of influence with respect to shop types/other services.	Kinesthetic
3	Understand what is required for development of primary data portfolio work	Development of a method, and completion of key skills work	How can we investigate our local environment?	Introduce coursework on how individuals use their local area. Outline what is required and then split into groups and allow students to plan their work, using computers to produce booking sheets etc. They should also fill in research diaries on the screen.	Kinesthetic Intrapersonal Maths logic Linguistic
6	Identify, explain and evaluate the key issues and processes of change which have an impact on the local area.	Links and connections to the wider world via travel, migration, the media etc.	How can we understand the process of house building in the Deepings?	Discuss the role of commuters in the Deepings. Use Aegis 3 to find out the change in population in recent years as a background to loss of population in London and gains in surrounding areas. Introduce idea of commuter settlements. Use photos in geography area of Langtoft. What does this tell us about commuting? Why is further housing development a contentious issue? Greenfield vs brownfield and higher density developments in cities. Includes an external speaker from local developer. Write a summary report looking at the future for the Deepings and the ways in which commuters and housing links to other areas and how students think the Deepings should change.	Interpersonal Intrapersonal Maths logic Linguistic
2	Understand where and how the local place fits into the UK	Broad outline of the UK and its constituent parts, & relative location in Europe.	How does my place fit into the UK? How is it like/different to other local places?	Complete two location maps of the UK and Europe. Locate the Deepings on both. Highlight the idea of core and peripheral areas. What is the Deepings located in? Then internet research some basic information on the EU – what is it? Why is it important?	Kinesthetic Intrapersonal Maths logic Linguistic
	Development of			Spend three lessons continuing with primary portfolio work, giving students time to consider and write their	

6	portfolio work			portfolio piece. Have to continue to write up their learning diaries for key skills. HAND IN DATE LAST MONDAY OF TERM	
5	Have an understanding of some of the key issues affecting the UK and their own lives early in the 21 st century	Some big geographical issues for the UK today that are relevant to the students	What are the big issues affecting the UK today and how do they affect me?	How are we affected by migration into the U.K.? Consider types of migration, and the historical background to England and migration. Complete some internet research – what are the figures and the paper stories? Is there a mismatch? Is migration a problem? Complete a summary – written, mind map or PowerPt. presentation.	Intrapersonal Maths logic Linguistic Interpersonal
3	Understand the term 'identity' and relate it to themselves.	Consideration of the term identity and multiple identities	How and why do people claim to have an identity? How does it help to understand others?	Ask students to 'characterise' different groups within the U.K. and then discuss why they have these identities – are they actually stereotypes? How can identities be seen as positive and/or negative? Do students have multiple identities dependent on scale?	Interpersonal Intrapersonal Maths logic Linguistic
1	Understand the definitions of the underlying principles			Define and discuss definitions for: <i>uneven development, interdependence, futures, globalisation, sustainability</i>	Intrapersonal Linguistic

Appendix 9 – Advertising agency advertising exercise outline

Terra Advertising

(taking a new perspective)

78 New Walk, Leicester, LE3 7HG

www.terraperspectives.com

3rd September, 2005

Team,

We have been awarded a new contract by South Kesteven District Council. They are keen to attract new businesses to the area, as well as a continued movement of people into the area to live. To help in meeting their aim the council has asked us to develop the following to attract potential interest:

- a brochure
- a poster
- a short powerpoint presentation

The information provided should include:

- What the area is like.
- Why the place is as it is.
- How it has been influenced by its links with other places.
- The impact it makes on other places.
- How the local area/community is changing.
- The issues which arise from these changes.

You should send a completed draft of your campaign to head office via e-mail (cognitivescapes@yahoo.co.uk) by Tuesday 27th September.

We look forward to seeing your campaign.

Good luck

Appendix 10 – Coasts scheme of work

Coasts

Year 11 optional units are written in an attempt to produce flexibility within the system. What follows is a suggested outline. Obviously, we are running through these units for the first time – any suggestions for development, ideas, websites, resources, etc please give straight to PW who will then distribute.

<i>Questions</i>	<i>Introduction</i>	<i>Research</i>	<i>Outcome</i>	<i>Resources</i>	<i>Learning styles</i>
<i>What are the factors behind the energy of the sea at any coast? What are the factors behind coastal processes</i>	Students should be introduced to the process of fetch, and then also tides (differentiate micro, meso, macro), waves, erosion, transportation and deposition and how sediment flows through the system. (2)	Students are given a map showing the main world surfing championship locations, a graph of tidal range and landforms, and a flow diagram showing flow of sediment through the coastal system PAIRED WORK AND OUTCOMES (3)	The introduction to the gallery catalogue	Map of surfing locations Graph of tidal range and landforms Flow diagram	Interpersonal Intrapersonal Visual Linguistic Mathematical
<i>Which patterns [forms] are typical and which processes are operating? When and where is the energy at its most active?</i>	Develop an initial understanding of coastal landforms as related to the work above. (3)	Students are given three contrasting images of coastal environments. They must choose two, and in groups of four produce a power-point presentation, and two side Publisher fact sheet, explaining the development of the coasts in the images. GROUP WORK AND OUTCOMES (3)		Images of coastal environments	Interpersonal Intrapersonal Visual Linguistic
<i>What are the features and habitats created by coastal erosion and coastal deposition?</i>	Introduce students to the Lincolnshire and Dorset coastlines as examples of erosional and depositional coastal environments	Building on work so far completed, students should complete some research on these two environments, using images to describe and explain the processes, and using work already completed to outline the movement of sediment, attempts by	Gallery 1 and 2 commentary	A list of resources A personalised learning environment on the school intranet/internet	Interpersonal Intrapersonal Visual Linguistic

		humans to modify this, and the habitats and landforms which result. They should also directly compare them. RESEARCH CAN BE GROUP BASED – OUTCOMES SHOULD BE INDIVIDUAL. <u>There will be an optional fieldtrip to Gibraltar Point to see the depositional environment at first hand.</u>			
	(2)	(4)			
<i>What do people do by the coast? How do these users conflict? What are the risks to people and how can they be managed?</i>	Introduction to conflict at the coast through a consideration of East Yorkshire (2)	None	Gallery 3 commentary		
<i>What are the issues and change happening in coastal landscapes? With one issue/change what are the facts and opinions? Loss of land through coastal erosion – what are the costs/benefits of (not) defending?</i>	There should be a general introduction to coastal issues and problems using visual stimuli, and then focus erosion on the East Yorkshire coast, giving an overview of the issues, the people involved and the potential solutions (2)	Internet research using personalised learning interface to structure. Research completed on the East Yorkshire coast, detailing the issue, options and potential solutions. Cost/benefit one case study along the coast. RESEARCH CAN BE GROUP BASED – OUTCOMES MUST BE INDIVIDUAL (4)		Internet interface	
<i>What do people like/dislike about coastal landscapes?</i>	Introduction to personal perspectives (1)	A personal account about a coastal landscape	Preface		

Appendix 11 – Fieldwork scheme of work

Fieldwork

Year 11 optional units are written in an attempt to produce flexibility within the system. What follows is a suggested outline. Obviously, we are running through these units for the first time – any suggestions for development, ideas, websites, resources, etc please give straight to PW who will then distribute.

Questions	Introduction	Research	Outcome	Resources	Learning styles
<i>What do I already know about fieldwork? What is the historical context?</i>	Students should be asked to complete an introductory research piece on the nature of fieldwork – internet based	Work through four elements: <ul style="list-style-type: none"> - What is fieldwork? - Explain how Darwin carried out fieldwork - What fieldwork does a modern university dept. do? - How has fieldwork changed? STUDENTS TO FORM RESEARCH GROUPS WHICH THEY WILL REMAIN IN THROUGHOUT THE UNIT (5)	A short report 750-1000 words long with maps, photos etc included. GROUP RESEARCH AND INDIVIDUAL OUTCOME	Internet site	Intrapersonal
Students at this point need to decide on a personal investigation to carry out – they will then go through the following elements and compete the work in tandem.					
<i>What is the basic process of research? What are the advantages/disadvantages of specific hypothesis testing/more qualitative approaches?</i>	What are the stages of an investigation? Quantitative/qualitative approaches. (1)	Students work through the approach they intend to take, and write out a draft proposal on the pro-forma provided. They also report back to others in their research group. (2)	Outline for investigation	Investigation pro-forma Fieldwork textbooks	
<i>How is data collected and who might use it? What is the range of data collected? How can the data be used to influence decision-making?</i>	Introduce students to different types of data set and consider how these data sets can be used to help make decisions. (1)	Students should set out data recording sheets, etc (1)	Completed data sheets		

<i>How can some experiments be biased and some fair? How can risk assessment be used to improve safety?</i>	Discuss the use of risk assessments and complete before students finish their data collection. Also, use a data set to discuss bias and fair tests. (2)	Complete a risk assessment and revise data collection with respect to bias etc. Collect data (2)	Completed risk assessment and data set		
<i>What simple ways are there to both describe and explain geographical data? Why is data collected often partial, incomplete and unreliable?</i>	Having collected their data, discuss with students the difference between describing and explaining data (1)	Begin to process data and write up investigation, including intro, method etc. (2)	Completed investigation up to discussion.		
<i>How can results be presented for different audiences? How can data be used to inform decision-makers and government?</i>	Discuss the different techniques – tabular, statistical and graphic for illustrating and processing data. (2)	Complete data processing and complete investigation, drawing out conclusions and evaluating (4)	Completed investigation.		

Appendix 12 – Outline for coasts catalogue portfolio

Coasts – A visual Odyssey

You have been asked to produce a catalogue for an art gallery which is showing a new exhibition on the coast and its different characteristics and moods.

You have been employed as a geographical specialist by the art gallery which wants you to complete the following sections in producing their catalogue.

1 – **Preface** – your personal feelings about the coast, the photos and the exhibition.

2 – **Introduction** – Here, they want you to use some photos and diagrams to explain to viewers the science behind the art. You need to cover various ideas and features which will be given to you later.

3 - **Gallery 1** – Dorset, The Powerful Sea – The first gallery has images of the Dorset Coast. You need to write a blurb for each photo. What is there? What has formed the coast as it is? How has the sea caused this coastline to develop?

4 – **Gallery 2** – Lincolnshire, the calm coast – The second gallery has images of the Lincolnshire Coast. Again, you need to write a blurb for each photo. What is there? What has formed the coast as it is? How has the sea caused this coastline to develop?

5 – **An appeal** – The photographer who has created the photos for the exhibition is from East Yorkshire and is putting the exhibition on in part to highlight the issues facing the local populations in that part of the country. You need to write a section at the end of the catalogue explaining the problems, conflicts and potential solutions which face the coastline there, including a clear, annotated map of the region to help people understand where places are and the problems they face.

Appendix 13 – Coasts textbook extract

The diagram on page 7 shows some of the main forms of erosional landforms found at the coast. Coastal areas are eroded by waves, and by **sub- aerial** processes.

The main processes which are caused by waves are:

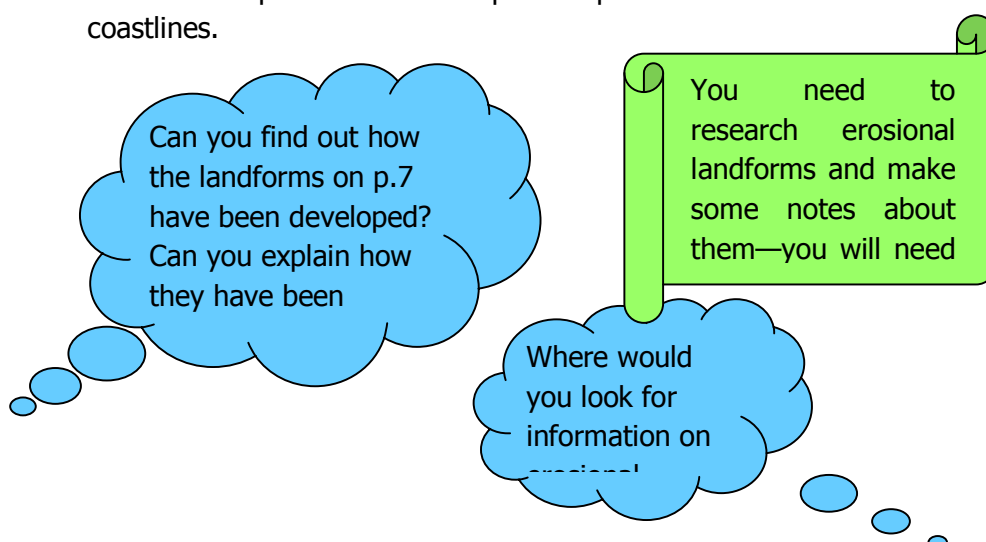
- **CORRASION**: also called **abrasion**, which is where waves pick up sand and pebbles and smash them against cliffs and other obstructions, wearing them away.

- **ATTRITION**: When the waves hit a beach, they cause the pebbles, etc to hit each other, wearing away corners, and edges. It explains the round, smooth appearance of pebbles on beaches which have hit each other.

- **CORROSION**: also called **solution**, which is the erosion of cliffs by salts and acids which occur naturally in the sea-water. They slowly dissolve certain rock types away.

- **HYDRAULIC PRESSURE**: the shear power of water waves, especially during storms, is enough to break up cliffs over time. In some cases, there can also be the presence of **cavitation**, where air pockets in the collapsing wave are put under huge pressure, collapse, and send out shock waves which can again destabilise the cliff.

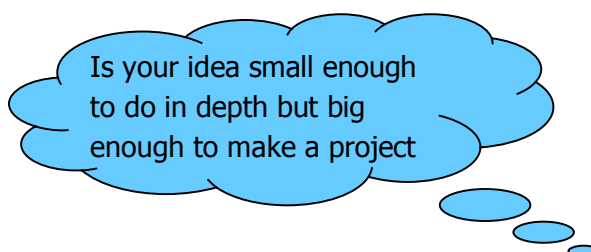
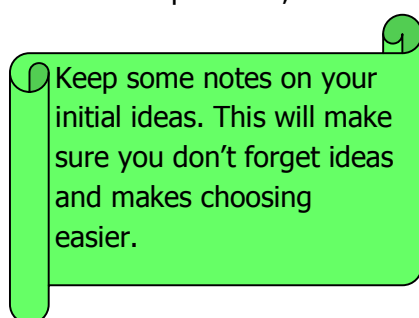
All of these processes are in part responsible for the erosion of coastlines.



Appendix 14 – Fieldwork textbook extract

BASIC APPROACHES TO FIELDWORK

As already shown in some of the early examples given, there are many possible approaches to fieldwork and investigations in geography. Therefore, you need to first decide the area you are interested in, and decide on a central question. From this, you should then look at a number of different books and magazines which might have articles about research or fieldwork. From this you can begin to devise how you would find out about your questions, and from this what your approach will be.



ASKING QUESTIONS

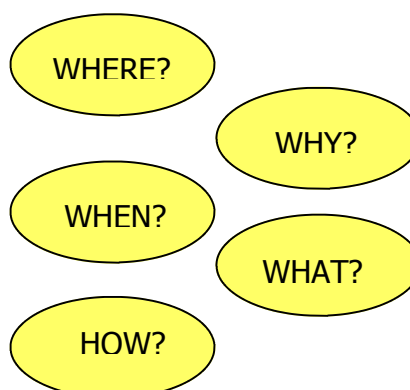


You should write your aim in the form of a question.

From this, you should be able to ask a small number of smaller questions which help answer the aim. This is crucial as it is the core and focus of your investigation.

As you go through your investigation, it is important to ask questions about everything. 'What information do I need?', 'How will I collect it?', 'Where can I collect my data?', 'Why do the results look like this?', 'When did that pattern occur in the data?', 'How does the data relate to my initial aim?'.

It is important that you continue to ask



Appendix 15 – Extreme environments portfolio outline

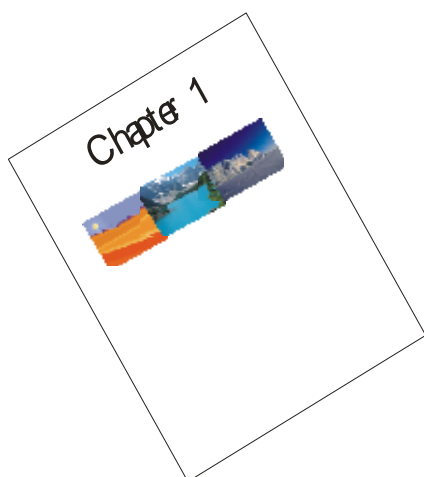
The Essential Guide Series

Outline

The 'Essential Guides Series' is a new publishing idea being developed by Kharma Publishing Ltd. They have found a market demand for guides which are not primarily based on highlighting the best places to go and stay, but which supplement these books which are already on the market, by giving an in-depth, but fun, background to the essential features and places in extreme environments around the world. These regions have been targeted as they are the areas which attract young, adventurous people who not only want fun and an adrenalin rush, but some idea of how those places come to be like they do.

Kharma would like you to develop a fully illustrated draft, and would like you to follow the chapter breakdowns they have already decided on. The stipulated outline is as follows:

Chapter 1: Experiencing Extreme



All the guides will start with a chapter on extreme environments. What are they? How can we identify them? How have others who have been to them told us all about them?

Remember, this is the first part of the guide – it needs to be informative, colourful, and have information on deserts, mountains and polar regions as these are the areas our target customers want to visit. (Approximately 1,000 words)

Chapter 2: Heading out

This chapter should give a good idea to the potential visitor of where the region is, which countries are included, some basic information like population sizes, wealth, and main cities. It should also try to give a general idea of the main features, both natural and human, as well as an introduction to the local culture (i.e. religions, languages, art, etc.)

With the content of the chapter, try to use maps, give examples of art, buildings, etc. We want the traveller to believe they have been before they go! (Approximately 1,000 words)





Chapter 3: Imagining heaven

In this chapter, you need to show how others have represented the region. Remember that there will be both visitors and indigenous populations (in most extreme environments). You need to find examples of photography, paintings, poems, etc and give travellers an idea of the atmosphere and what it says about the people as well as the region.

(Approximately 1,000 words)

Chapter 4: Digging Deep

This is a chapter which explains why!

- Why is the landscape like it is? Looking at the big processes that shape the land
- Why is the climate like it is?
- Why is the vegetation like it is?

Here, you need to get deep into the Geography of the area – if it has glaciers, why? What do they do to the landscape? Why are there mountains? Why does it rain in the summer but less in the winter? Why do rivers flood so often? You're going to need bags of explanation, diagrams, and photos – keep them interested whilst giving them loads of understanding.

(Approximately 4,000 words)





Chapter 5: Meeting the Challenge

In this chapter, you need to give an idea of how people live, work and visit the region. Give some background impression of the challenges people meet in the region, and then give some examples of how people make a living, the problems they encounter and the solutions they develop. Also, give an idea of how foreigners use the region, especially in terms of extreme sports, and tourism – after all that is why they have bought the book!!!!

Remember to give some good examples and stories, use photos, maps etc. You really need to show how people survive and thrive in the region.

(Approximately 1,500 words)

Chapter 6: Look to the Future

In this last chapter, you need to outline the potential changes which might take place in the region over the next 50-100 years. Outline the main changes, and explain who will be most affected by them. Also try to make readers aware of the ideas of interdependence, globalisation and sustainability – we want them to enjoy their visit, but we want others to be able to follow in their footsteps one day – and still have the chance to enjoy the experience.

(Approximately 1,500 words)



You will need to build up the chapters as you go. Our team of consultants will cover some of the basic territory with you so that you can tackle each chapter with confidence. There will also be a local bulletin board where people can share ideas and resources.

Good luck!

Appendix 16 – Cultural geography scheme of work

Cultural Geography

What has geography to do with mass media and popular culture, two major influences on our everyday life? The answer for many modern geographers is that they are interested in what is called 'the new cultural geography'. Recognising that there are a variety of groups and cultures in society, cultural geographers study how cultures develop and recent work has examined popular culture, the culture of cities, of work, fashion, the link between culture and environment and so on. The existence of a plurality of cultures in a place means that political arguments develop about how a place is represented. Whose view of a place is to be dominant? Cultures are in a constant state of flux. They are changing and dynamic in response to economic, social and political change.

This is predominantly an academic unit. It focuses on examining what culture is and what makes the variety of cultures reflected in places, including the local region. Questions are raised about how places are represented, for example in the media, and the political nature of the representation of places is examined. The processes of change in cultures over time are investigated and questions are raised about how different groups experience cultural change. In considering future scenarios candidates have the opportunity to investigate the idea that globalisation is leading to the emergence of a global culture or that the differences between people and places are widening. Candidates have ample opportunity to consider their own personal response to these issues and to present their thoughts and conclusions in a creative manner.

Useful links:

This Option will link well with the Core themes My place: living in the UK today – cultural aspects of 'my place' – the local region, An Extreme Environment: Exploring landscape and process – ways in which the chosen environment has been represented, imagined and perceived and People as consumers – the impact of our decisions – projection of cultural images by decision makers – cultural preferences.

The Options which offer constructive links are:

- 2: Geographical information systems – use of ICT in obtaining and processing data as well as reporting findings.
- 3: Geography in the news – culture as reflected in the media.
- 5: Planning where we live – cultural impacts on local planning issues.
- 7: Investigating geography through fieldwork – use of field approaches in obtaining data.

This Option is internally assessed and externally moderated. It is 25% of the GCSE award.

This predominantly *academic* Option offers candidates the opportunity to study an area of recent interest in geography. While cultural geography is not new as part of the wider discipline, recent work has shifted away from a concern with traditional features of the landscape to explore a wider range of human experience. As with most energetic new fields of study, cultural geography has burgeoned and is characterised by a number of methodological approaches and a huge range of content. A few issues of significance to young people are selected from this range for the purposes of the Option.

The Option invites candidates to explore the meaning of culture, its significance for geographers and how geographers study it. This will help them to understand that culture reflects a society and helps to make up the characteristics of that society. The Option places emphasis on the idea of a plurality of cultures. Most young people are familiar with the idea of multiculturalism and candidates are encouraged to evaluate the idea of 'multicultural Britain' in a critical manner. The plurality of cultures in a place leads to arguments about the meaning of places and how places are represented. Candidates are invited to investigate how places are represented in terms

of modern media, texts, advertisements, travel guides, television, video and music, for example. Examination of cultural change can involve candidates in the links between cultural change and changes in places at a range of scales from local to global. Candidates are engaged in a study of issues concerning globalisation and global culture. The political dimensions of culture and its impact on place will be important in all aspects of study in this Option.

In undertaking their investigations, candidates will be encouraged to use a range of techniques to acquire data, analyse its significance and report their findings effectively. In all their enquiries, they will be invited to reflect on their personal experience and perceptions.

Aims

The aims of this unit are for candidates to:

- develop knowledge and understanding of culture as it is studied by geographers;
- develop an understanding of the role of debates about culture in the contemporary world and future developments;
- examine their personal response to issues concerning culture and place;
- use appropriate skills and techniques in investigating questions about culture and cultural change and reporting their findings.

Assessment Criteria

The assessment requires candidates to:

- show knowledge and understanding of the different meanings of culture as it is studied by geographers (AO1, AO2)
- apply their knowledge and understanding to help clarify key issues about culture and the impacts of cultural change at a range of scales (AO1)
- demonstrate the ability to express their own personal views about the relationships between culture and place and how places are represented (AO2)
- show skill in gathering information from a range of sources including fieldwork (AO3)
- use appropriate forms of presentation and communication of the findings of their investigations with respect to cultural geography (AO3).

Assessment Tasks

Candidates must undertake and present three different responses to the work of the unit:

- A personal response to the issues concerning cultural diversity in Britain using any medium;
- 'Brand new world?' A newspaper feature exploring whether globalisation is leading to a 'global culture' – or are people challenging this process? This is an individual piece of work.
- A group response - 'Your place or mine?' Produce a multi-media installation to show different representations of a place. This may focus on dominant representations of a place and use other images or interviews to show different sides of a single place.

Flexibility should be given to candidates in planning and presenting their materials so as to enable them to demonstrate their individual strengths. Credit will be given for individuality and originality. Sources must be acknowledged. The assessment tasks should be integrated into the normal teaching and learning programme developed for the unit.

MULTIPLE INTELLIGENCES

Inherent in this scheme of work is the opportunity to allow students to work through a series of media. Because of the flexible nature of the scheme, dictated use cannot be given, but ensure that students have a range of media through which to work.

	Enquiry questions	Content/context for study	Candidates should be able to:	Suggested outline	Learning outcomes
Section 1 Lessons 1 - 8	My Cultures <ul style="list-style-type: none"> • What is 'culture'? What is my culture? Where does culture come from? Does culture matter? • What is the culture of our locality/region within the context of the country? How do we know this? Is there one or are there many cultures? • Is Britain multicultural? What are the challenges of living in a multicultural society? • How far does our locality reflect multicultural Britain? • What are the challenges of living in a multicultural society? • What makes the culture of a place? What is American/European/Australian culture? 	<ul style="list-style-type: none"> • Different meanings of 'culture' ('high/low'; 'elite/popular'; 'sub-culture'; 'dominant culture') • Local/regional and national study – how locality or region reflects cultural influences. Focus on the local or regional study with overview of the national • Explore cultural diversity in Britain through focused study of images of Britain – focus on communities and landscapes through films, poems, literature • Examine aspects of local history and geography, through fieldwork in the local environment – people's perceptions of Britain • Personal response exercises, analysis of newspaper coverage, study of migration issues • Culture of places is linked to economic, political and social factors. Case studies of places 	<ul style="list-style-type: none"> • Describe and explain different uses of the term 'culture' • Recognise and understand that places reflect a variety of cultures • Recognise and understand characteristics of Multicultural Britain and its challenges • Understand how geography and culture are related 	1. Students should read p.2 of the booklet and complete the exercise at the end of the page. 2. Students should now start to work on the Deepings by looking at p.3-4 and building a montage about the Deepings. 3. They should now try to define multiculturalism and what this might mean in the U.K. considering the various prompts on p.5-8 before attempting the two tasks on p.8. 4. At the same time, they should try to build a number of migration stories up in a portfolio. 5. Discuss as a group the issues surrounding migration and then develop a personal response to the challenges of multiculturalism (as laid out on p.10) this should be added to as a portfolio piece.	Students should be able to: <ul style="list-style-type: none"> - describe the differences in the ways culture is defined. - develop a critical understanding and evaluation of the culture of the Deepings. - assess and discuss the issue of multiculturalism in the U.K.

Section 2 Lessons 9 – 15	<ul style="list-style-type: none"> • What do we know about places? How do we know about them? What places are represented and what places are not? • How are particular places and environments portrayed and why? • Are these portrayals realistic/reliable? • How do images of places get made and reproduced over time? Are images reliable? 	<p>Cultural objects</p> <ul style="list-style-type: none"> • Knowledge of places may be direct or mediated. The media covers some places in more detail than others and often represents places in particular ways • Study of a range of place representations and recognition of whose views are represented (e.g. how far do representations of rural England reflect life in rural areas)? • Study of how the developing world is represented using media and text books. Study and discussion of media production. • Study of one place and how it is represented in popular culture. • E.g. a film representing a place (Sweet Home, Alabama; Full Monty). Study of aspects of regions. Writing a film review. 	<ul style="list-style-type: none"> • Understand how people's knowledge of places and environments is often gained from media representations • Understand and explain that representations are always partial and often reflect the world views of dominant groups • Understand how a place or environment is represented in media texts 	<p>1. Ask students to briefly research what is meant by the term 'the media'. 2. From this they should begin to build a bank of images and writings about four places (given on p.11) with which to create a commentary about those places. 3. Introduce a group piece which is part of the portfolio work, on cultural representation of place (outlined on p.13)</p>	<p>Students should be able to:</p> <ul style="list-style-type: none"> - discuss the role of the media in mediating culture - critically deconstruct place and its media portrayal - carry out independent research to show understanding of media and place - work successfully as part of a team to develop a portfolio piece on place and culture.
--------------------------	---	---	---	---	---

Section 3 Lessons 16-24	<ul style="list-style-type: none"> • What evidence is there that the culture of a locality or nation has changed or is changing? • How does cultural change affect our daily lives? • How do different groups experience and/or interpret cultural changes? Are changes seen as positive (opportunities) or negative (threats)? How do disputes over cultural change get settled? • Are processes of globalisation leading to a 'global culture'? How do different groups respond to globalisation and cultural change? 	<p>Making cultures</p> <ul style="list-style-type: none"> • Study of cultural change within a locality focusing on aspects of history and geography. Survey of people's views. Oral history -how do people experience change? Study of debate over national culture • Study of the impact of change on one area of everyday life, e.g. fashion, food or sport • Study of the views of different groups about cultural change within a locality/nation; how do people resist change? e.g. French response to the building of Euro Disney. Study of cultural change in one area, e.g. sport (football), fashion (music), food • Study of issue of globalisation and global culture, e.g. global McDonaldisation. How this is contested (anti-globalisation) • Discussion of future scenarios with respect to globalisation. 	<ul style="list-style-type: none"> • Understand and explain how cultures change over time • Understand how cultural change affects the geography of our daily lives • Recognise that processes of cultural change are contested and involve winners and losers • Evaluate the extent to which processes of globalisation are leading to 'global culture' and suggest future scenarios 	<p>1. Students should use the booklet and work in groups to develop an oral presentation about the cultural change in Leicester – using at least three other sources of information than the booklet. 2. Having done this, they should then do some research into how one area of their life is impacted by cultural change using the examples in the booklet as a starting point. 3. They should then go on to discuss the merits of cultural change, and the negative reactions the process illicit in some – using McDonalds and US films as a vehicle. 4. Finally, they should consider the future of the global culture and its possible alternative outcomes. Show them extracts from THX1138 and Minority Report and then look at the outline for the portfolio piece on p.27</p>	<p>Students should be able to:</p> <ul style="list-style-type: none"> - critically assess the role of cultural and social change - the ways in which cultural change affects their own lives - carry out independent research on aspects of cultural change - complete a newspaper feature on the possible futures of global culture
-------------------------	---	---	---	---	---

Appendix 17 – Travel and tourism scheme of work

TRAVEL AND TOURISM

Introduction to the Option

Everyone looks forward to going on holiday and becoming a tourist. We talk of wanting escape, fun, action, different customs and products, or of 'visiting paradise', but each of these expectations makes different demands on travel, on tourist places and on tourism resources around the world.

This Option focuses on two aspects; firstly on travel and tourism as one way in which places are connected to the wider world and secondly on the impacts and effects of tourism on the destinations. Tourism produces a unique set of interconnections between places because of its relationships between producers (the tourist location) and consumers (the tourists). Effectively, tourists' activities help to shape the lives and landscapes of communities in far distant countries.

This Option provides the opportunity for candidates to consider the definitions and characteristics of different kinds of tourism, to explore two contrasting travel and tourism destinations, and to think in a critical way about their own tourist experiences. The emphasis of study will be on raising awareness of the global–local connections that lie behind tourist activity and developing understanding of the economic, social and political impacts of tourism.

Since this is a predominantly vocational Option, there will also be an opportunity for candidates to consider how a travel company works and what it might be like to work in the tourism industry.

This predominantly vocational Option reflects both the changing nature of travel and tourism and the ways in which academic geographers are now studying tourism. The industry is becoming more global in its reach and its marketing strategies. In this respect, this Option has potentially strong links with People as Consumers. It addresses the need for candidates to have a sound understanding of location and place in relation to the study of tourism. In academic geography, the focus is increasingly on stressing the way in which tourism provides a unique set of local-global connections and on investigating tourism as another driver in cultural exchange. Academic geographers see recent developments in tourism as part of a shift to a post-industrial economy in which places earn their income through the flow of information, words, images and texts. Hence this Option also includes the opportunity to consider images, expectations and advertising.

This option provides the opportunity to study two destinations in contrasting locations to reflect the wide diversity in travel and tourism destinations, not just in the western world, but across the globe. One destination is to be chosen from a richer more Westernised country and one from a poorer, Third World country. The UK can be included as an example if wished, to facilitate opportunities for primary data collection.

Concepts such as globalisation are explored through this Option. Examples of uneven development and sustainability can also be referred to, providing a holistic approach to the study of place and the environment. Future considerations are very important both in the industry and in any critique of its impacts.

The aims of this Option are for candidates to:

- understand how travel and tourism provide a unique set of interconnections between distant and local places, and how the travel and tourism industry promotes and manages these interconnections;

- identify different kinds of travel and tourism destinations and recognise their different demands and impacts on places;
- gain critical awareness, through case studies, of the different ways in which tourist places are imagined, envisaged and marketed and how this affects their futures;
- develop and apply a range of enquiry skills, particularly the use and interpretation of maps, charts and statistics and also the critical analysis of advertising texts and cultural images.

Candidates are required to:

- show a sound knowledge and understanding of the travel and tourism destinations studied and of the way in which the industry operates (AO1);
- demonstrate understanding of the different views and interpretations of tourist activity and of ways in which these impact on tourist places (AO1/AO2);
- demonstrate abilities to use maps, charts, images and statistical data effectively and to write clear and well-argued reports and analyses (AO3);
- display the ability to decide on their own views and judgements about tourism and its consequences, and to express these clearly and appropriately for the audience selected (AO2/AO3).

Assessment Tasks

Candidates must undertake and present two different responses to the work of the Option:

- an illustrated report comparing the two chosen travel and tourism destinations. This should demonstrate an understanding of the importance of travel and tourism to each destination and surrounding area, possibly through the development of one focused issue or a general comparison. It should also evaluate the impacts of travel and tourism on the two destinations and make predictions for the future;
- a piece of travel writing based on the candidates' own experience of visiting a place.

MULTIPLE INTELLIGENCES

Inherent in this scheme of work is the opportunity to allow students to work through a series of media. Because of the flexible nature of the scheme, dictated use cannot be given, but ensure that students have a range of media through which to work.

Outline scheme of work

	Enquiry questions:	Content/contexts for study:	Candidates should be able to:	Suggested outline	Learning outcomes
Section 1 Lessons 1-4	<ul style="list-style-type: none"> • Why do people go on holiday and what do they do? Where are the popular destinations? • What are the different kinds of destinations? How do people travel to them? • How is tourism sold? What are the expectations of travellers? What are the demands placed on the receiving destinations? 	<ul style="list-style-type: none"> • Travellers and Tourists - a global phenomenon. • Investigate the definition, meaning and global spread of tourism through e.g.: tourist literature, statistics, maps, personal experiences, travels writing, tourist geography texts. 	<ul style="list-style-type: none"> • Explain how the demand for tourism links places across the world; • Identify different types of tourist destinations and explain the expectations held by tourists and the consequent demands placed on the destinations; • Respond critically to a range of different kinds of writing about tourism. 	<ol style="list-style-type: none"> 1. Ask students to read through p.2-4 of the booklet and then research the questions at the end. 2. Investigate U.K. destinations using the booklet data, including maps, images etc. and then use the outline on p.6 to complete an introduction to tourism. 	<p>Students should be able to:</p> <ul style="list-style-type: none"> - describe the main types of holiday and the destinations involved. - Give an impression of how tourism links places - Discuss the pattern of U.K. tourist destinations
Section 2 Lessons 5-7	<ul style="list-style-type: none"> • How can a holiday experience be critically evaluated, assessing positive and negative features from the point of view of the consumer and the destination? 	<p>A Personal Response to Travel/Tourism</p> <ul style="list-style-type: none"> • Evaluate a personal holiday experience by producing a piece of travel writing for a magazine about the holiday; • Take into account the impacts on the destination as well as the views of the holidaymaker. 	<ul style="list-style-type: none"> • Critically recount and evaluate a holiday experience, recognising different views and impacts; • Outline the skills, abilities and knowledge required by travel and tourism workers; 	<ol style="list-style-type: none"> 1. Students to bring in examples of travel writing from home. Analyse and discuss formats and content. 2. Students use outline on p.8 of booklet to write their own article to be included in their final portfolio 	<p>Students should be able to:</p> <ul style="list-style-type: none"> - describe the main features of travel writing - develop and write their own magazine/newspaper article about a family holiday.

<p>Section 3 Lessons 8 - 16</p>	<ul style="list-style-type: none"> • What is this place like? Where is it? What visitor resources are available? • How is the destination promoted? What images are used to promote the destination and why these and not others? • Which groups of people are attracted by these images and attractions? • What are the impacts of tourism? How is the place changing? What are the future prospects? • What are the main differences and similarities between the two travel and tourism destinations? 	<ul style="list-style-type: none"> • Investigating Destinations Select two different travel and tourism destinations (regional or city scale), one from a wealthy, more westernised country and one from a poorer, majority country. For each, explore and compare: <ul style="list-style-type: none"> - location, characteristics and attractions; - how marketed and sold; - growth and development; - socio-economic impacts; - future prospects. 	<ul style="list-style-type: none"> • Describe, explain and compare the location, character and key features of two different tourist destinations; • Analyse and explain how destinations are represented to attract different groups of people; • Assess the impacts of tourism on different destinations and surrounding areas; • Predict how destinations are likely to change and develop as a result of increasing/decreasing numbers and changing circumstances. 	<p>1. Students should be introduced to the outline of the work comparing two destinations. 2. They should read through the example on the Galapagos Islands and then feed back in groups about the types of research that will be required. 3. Students complete research work and write-up to be included in their final portfolio, with regular small group tutorials to support</p>	<p>Students should be able to:</p> <ul style="list-style-type: none"> - Carry out independent research work on two contrasting holiday destinations - demonstrate that they have found information from a number of different sources. - develop a clear discussion of each location AND a CRITICAL COMPARISON between them.
---------------------------------	---	--	--	---	--

<p>Section 4 Lessons 17-24</p>	<ul style="list-style-type: none"> • What is the company? What market is it tapping? What kind of tourism does it sell? • How are its operations organised to link the product and the consumer, different sites, different scales of activity? • In what sense is it a national or a global company? • What different jobs are available in travel and tourism? What skills and knowledge are required? • What are the training routes? Would I consider travel and tourism as a career? And if so, how would I plan a career strategy? 	<p>Investigating the Providers</p> <ul style="list-style-type: none"> • Select one actual travel company (medium or large). Investigate: <ul style="list-style-type: none"> - the niche/market it occupies; - how it operates, including staff, location of offices, marketing and sales. • And draw out the geography behind this. • Working in Travel and Tourism: <ul style="list-style-type: none"> - jobs in travel and tourism (eg sales, marketing, researching destinations, travel guide, travel writing); - routes to further training and education; • - candidates' personal views and action plans about travel and tourism as a career. 	<ul style="list-style-type: none"> • Explain the concept of tourism as linking places, through a description of how one travel company operates; • Show how one company's marketing material offers particular images and expectations and relate these to the places; • Use maps, statistics and charts to explain the geography behind one travel company. • Express own views and opinions on travel and tourism as a career and/or make own personal career plans. 	<p>1. Introduce students to Thomas Cook, and ask them what they think they will need to know and understand, and how they might go about finding the answers. 2. Go through the outline on p.29 and plan with the students what the final piece of work will look like and include. 3. Give students time to develop their ideas and responses. 4. Ask students to complete the small activity on p.30 of the booklet to consider jobs in the tourist and travel sectors.</p>	<p>Students should be able to:</p> <ul style="list-style-type: none"> - describe and explain the main workings of Thomas Cook as a tourism provider - discuss how Thomas Cook markets its products - describe the geographical spread of destinations offered by the company - discuss the types of job available in the tourist sector.
--------------------------------	---	--	--	---	---

**Appendix 18 – Outline for group exercise for cultural geography
scheme of work**

You will have to work as part of a group, completing a multimedia installation entitled 'Your place or mine?'. This piece of work should show different representations of place—in this case the Deepings. You need to show the general representation of the Deepings - in other words the representation that is generally given to the rest of the world. However, you should then aim to show other, different perspectives on the place. You will need to consider the media through which you intend to do this.

Therefore, initially you need to:

- thought shower the representations you wish to show, including the dominant one.

Appendix 19 – Travel and tourism exercise exemplar



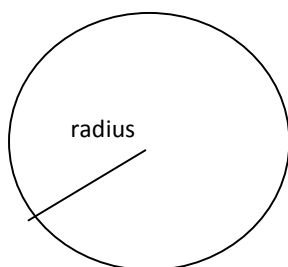
Introduction to Travel and Tourism

Having considered why people go on holiday and what they do once they are there, you now need to develop an idea of where the popular destinations are. Using the tables below, you need to complete a map which highlights the countries named, and then you need to draw proportional circles to show the different volumes of people going to each. Having done these, finally you need to annotate the map giving some idea of the types of holiday the different countries provide. Notes on producing proportional circles are given on the other side of this paper.

Country	Visits ('000s)	Country	Visits ('000s)
Spain (inc Balearic Is.)	8,513	USA	2,214
France	3,246	Caribbean	577
Greece	1,706	Canada	340
Italy	1,142	Tunisia	329
Irish Republic	1,137	India	235
Portugal	988	Australia	165
Turkey	946	South Africa	165
Cyprus	848	Mexico	157
Malta	416	Thailand	140
Germany	397	Egypt	94

Proportional Circles

To draw proportional circles onto your map, you need to complete the table below. Firstly, you need to calculate the square root value of the number of visits for each country. For example, there were 8,513 (thousand) visits to Spain, so the square root of 8,513 is approximately 92 (to the nearest whole number). The smallest number of visits is to Egypt, with 94 (thousand) visits. The square root of this is 10 (to the nearest whole number). The square root value is then the radius of the size of the circle for that country in mm, i.e.



However, this would require some very large circles, so all the square roots have been multiplied by 0.5 to make the circles smaller to fit onto the map properly. As a result, the value for Spain becomes 46mm rather than 92mm.

Country	Visits ('000s)	Square root	X0.5	Country	Visits ('000s)	Square root	x0.5
Spain (inc Balearic Is.)	8,513	92	46	USA	2,214		
France	3,246			Caribbean	577		
Greece	1,706			Canada	340		
Italy	1,142			Tunisia	329		
Irish Republic	1,137	34	17	India	235		
Portugal	988			Australia	165		
Turkey	946			South Africa	165		
Cyprus	848			Mexico	157		
Malta	416			Thailand	140		
Germany	397			Egypt	94	10	5

References

Allen, M. and Ainley, P. (2007) *Education make you fick, innit? What has gone wrong in England's schools, colleges and universities and how to start putting it right*, London: Tufnell Press.

Askew, S. and Lodge, C. (2000) 'Gifts, ping-pong and loops – linking feedback and learning' in S. Askew (ed.) *Feedback for Learning*, London: Routledge-Falmer.

Assessment Reform Group (1999) *Assessment for Learning. Beyond the Black Box*. University of Cambridge: School of Education.

Ball S.J. (2008) *The Education Debate*, London: Policy Press.

Barry, M. (2004) *Jennifer Government*, London: Abacus.

Bell, J. (1999) *Doing Your Research Project*, (3rd ed.) Buckingham: Open University Press.

Benejam, P. (1993) 'Quality in research in geography education', *International Research in Geographical and Environmental Education*, 2 (1), pp. 81-84.

Bennetts, T. (2005) 'Progression in Geographical Understanding', *International Research in Geographical and Environmental Education*, 14 (2), pp. 112 – 132.

Bentley, T. and Miller, R. (2006) 'Personalisation: Getting the questions right', in OECD (ed.), *Personalising education: Schooling for tomorrow series*, Paris: OECD, pp. 115-126.

Betts, G. (2004) 'Fostering Autonomous Learners through Levels of Differentiation', *Roeper Review*, 26, pp.190-191.

Black, P., Harrison, C., Lee, C., Marshall, B. and Wiliam, D. (2002) *Working inside the black box. Assessment for learning in the classroom*, Kings College: London.

Black, P. and Wiliam, D.(1998) 'Assessment and Classroom Learning', *Assessment in Education: Principles, Policy & Practice*, 5 (1), pp. 7 – 74.

Black, P., and Wiliam, D. (2005) 'Developing a theory of formative assessment', in J. Gardner (ed.), *Assessment and Learning*, London: Sage.

Bleach, K. (1998) *Raising Boys' Achievement in Schools*, Stoke-on-Trent: Trentham Books.

Boardman, D. (1993) 'Evaluating quality in research: Asking *why*? As well as *how*?' *International Research in Geographical and Environmental Education*, 2 (1), pp. 85-88.

Boud, D. (1993) *Developing Student Autonomy in Learning*, London: Kogan Page.

Boulet, M.M., Simard, G. and Demelo, D. (1990) 'Formative evaluation effects on learning music', *Journal of Educational Research*, 84, pp. 119-125.

Broadfoot, P. (2000) 'Assessment and Intuition' in T. Atkinson and G. Claxton (eds.) *The Intuitive Practitioner*, Buckingham: Open University.

Broadfoot, P. (2007) *An Introduction to Assessment*, London: Continuum.

Broadfoot, P., Pollard, A., Osborn, M., McNess, E. and Triggs, S. (1998) 'Categories, standards and instrumentalism: theorizing the changing discourse of assessment policy in English primary education', Paper presented at the AERA conference, San Diego, April.

Brooks, R. and S. Tough (2006) *Assessment and Testing: Making Space for Teaching and Learning*, London: Institute for Public Policy Research.

Brown, A. J. and Dowling, P.C. (1998). *Doing Research/Reading Research: A Mode of Interrogation for Education*, London: Falmer Press.

Bryman, A. (2004) *Social Research Methods*, Oxford: Oxford University Press.

Burgner,D. and Hewstone,M. (1993) 'Young children's causal attributions for success and failure: 'Self-enhancing' boys and 'self-derogating' girls', *British Journal of Developmental Psychology*, 11, pp.125-129.

Burrell, G. and Morgan, G. (1979) *Sociological Paradigms and Organisational Analysis*, London: Heinemann.

Burton, D. (2007) 'Psycho-pedagogy and personalised learning', *Journal of Education for Teaching*, 33 (1), pp. 5-17.

Butler, R. (1987) 'Task-involving and ego-involving properties of evaluation: effects of different feedback conditions on motivational perceptions, interest and performance', *Journal of Educational Psychology*, 79, pp. 474-482.

Butler, R. (1988) 'Enhancing and undermining intrinsic motivation; the effects of task-involving and ego-involving evaluation on interest and performance', *British Journal of Educational Psychology*, 58, pp. 1-14.

Butt, G. (2003) 'Geography Teachers as Action Researchers', in R. Gerber (ed.) *International Handbook on Geographical Education*, Netherlands: Kluwer Academic Press, pp.273-284.

Butt, G., Weeden, P. and Wood P (2004) 'Boys' underachievement in Geography: An issue of ability, attitude or assessment?' *International Research in Geographical and Environmental Education*, 13(4), pp.329-347.

Campbell, A. and Groundwater-Smith, S. (2007) *An ethical approach to practitioner research: Dealing with issues and dilemmas in action research*, London: Routledge.

Campbell, J., Robinson, W., Neelands, J., Hewston, R. and Mazzoli, L. (2007) 'Personalised learning: ambiguities in theory and practice', *British Journal of Educational Studies*, 55(2), pp.135-154.

Cannell, C.F. and Kahn, R.L. (1968) 'Interviewing' in G. Lindzey and A. Aronson (eds.), *The Handbook of Social Psychology, vol. 2, Research Methods*, New York: Addison Wesley.

Carter, K. and Franey, T. (2004) *System thinkers in action; programme and policy perspectives on developing collaborative enquiry-based leadership and learning in networked contexts*. Paper presented at the CARN Annual Conference, Malaga, Spain, 5-6 November. pp.1-24.

Cigman, R. and Davis, A. (2009) *New Philosophies of Learning*, Chichester: Wiley-Blackwell.

Cohen, M. (1998) 'A habit of healthy idleness': boys' underachievement in historical Perspective', in D. Epstein., J. Elwood, V. Hey and J. Maw (eds) *Failing Boys? Issues in Gender and Achievemen*, Buckingham: Open University Press.

Cohen, L. and Manion, L. (1994) *Research Methods in Education*, London: Routledge.

Cohen, L ., Manion, L. and Morrison, K. (2000) *Research Methods in Education* (5th edition). London: Routledge-Falmer.

Cope, B. and Kalantzis, M. (eds.) (2009) *Ubiquitous Learning*, Urbana: University of Illinois Press.

Crooks, T.J. (1988) 'The impact of classroom evaluation practices on students', *Review of Educational Research*, 58, pp. 438-481.

Cutler, T., Waine, B. and Brehony, K. (2007) 'A New Epoch of Individualization? Problems with the "Personalization" of Public Sector Services', *Public Administration*, 3, pp. 847-55.

Dann, R. (2002) *Promoting Assessment as Learning: Improving the Learning Process*, London: Routledge.

Dick, B. (2006) 'Action research literature 2004-2006', *Action Research*, 4 (4), pp. 439-458.

Dickinson, L. (1987) *Self-Instruction in Language Learning*, Cambridge: Cambridge University Press.

Dickinson, L. (1995) 'Autonomy and Motivation: A Literature Review', *System*, 23 (2), pp. 165-74.

Downes, P. (1994) 'The gender effect', *Managing Schools Today*, 3 (5), pp. 7-9.

Duffy, P. and Bruns, A. (2006) 'The use of blogs, wikis and RSS in education: a conversation of possibilities' in *Learning on the move: a university for the real world*, Brisbane : Queensland University of Technology, Dept of Teaching and Learning Support Services, pp.31-38.

Durndell, A., Glissov, P. and Siann, G. (1995). 'Gender and computing: Persisting differences', *Educational Research*, 37(3).

Dweck, C. S. (2000) *Self-theories: Their Role in Motivation, Personality, and Development (Essays in Social Psychology)*, Lillington: Psychology Press.

Dweck, C.S. and Elliott, E.S. (1983) 'Achievement motivation' in P. Mussen and E.M. Hetherington (eds.) *Handbook of Child Psychology*, New York: Wiley, pp.643-692.

Dweck, C. S., Goetz, T. E. and Strauss, N. L. (1980) 'Sex differences in learned helplessness', *Journal of Personality and Social Psychology*, 38(3), pp. 441-452.

Ecclestone, K. (2002) *Learning Autonomy in Post-16 Education*, London: Routledge.

Eisner, E.W. (1993) 'Reshaping assessment in education: some criteria in search of practice', *Journal of Curriculum Studies*, 25(3), pp.219-233.

Elliott, E. S. and Dweck, C. S. (1988). 'Goals: An approach to motivation and achievement'. *Journal of Personality and Social Psychology*, 54, pp. 5-12.

Elwood, J. (1998) 'The use of context in examination and assessment items: a source of inequality in assessment outcomes', *British Journal of Curriculum and Assessment*, 8(3), pp. 31 - 32.

Elwood, J. and Comber, C. (1996) *Gender differences in examinations at 18+*, London: Institute of Education.

Ercikan, K. and Roth, W-M. (2006) 'What Good Is Polarizing research Into Qualitative and Quantitative?' *Educational Researcher*, 35 (5), pp.14-23.

Feldman, A. (2007) 'Validity and quality in action research', *Educational Action Research*, 15 (12), pp. 21 -32.

Fernandes, M. and Fontana, D. (1996) 'Changes in control beliefs in Portuguese primary school pupils as a consequence of the employment of self-assessment strategies', *British Journal of Educational Psychology*, 66, pp. 301-313.

Fielding, M. (2006) 'Leadership, Personalisation and High Performance Schooling: Naming the New Totalitarianism', *School Leadership and Management*, 26 (4), pp.347-369.

Fish, D. and Cole, C. (2005) *Medical Education: Developing a Curriculum for Practice*, Milton Keynes: Open University Press.

Flavell, J.H. (1979) 'Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry', *American Psychologist*, 34(10), pp. 906-911.

Foskett, N. (1997) 'Teaching and Learning Through Fieldwork' in D. Tilbury and M. Williams (eds.) *Teaching and Learning Geography*, London: Routledge, pp.189 – 201.

Galton, M. and MacBeath, J. (2008) *Teachers under Pressure*, London: SAGE.

Galton, M. and MacBeath, J. (2008) *Teachers under Pressure*, London: SAGE/National Union of Teachers.

Gardner, H. (1983) *Frames of Mind: The Theory of Multiple Intelligences*, New York: Basic Books.

GEES (2006) *Evaluation report – Making the Connection, a sub-project of Widening the Appeal of Geography*.

Gerber, R. and Williams, M. (2000) 'Overview and International Perspectives' in A. Kent (ed.) *Reflective Practice in Geography Teaching*, London: Paul Chapman Publishing, pp. 209-218.

Giddens, A. (1998) *The Third Way: The renewal of social democracy*. London: Polity.

Gillespie, H., Boulton, H., Hramiak, A. and Williamson, R. (2007) *Learning and Teaching with Virtual Learning Environments*, London: Learning Matters Ltd.

Gilbert, C. (2006) *2020 Vision: Report of the Teaching and Learning in 2020 Review Group*, Nottingham: DfES Publications.

Gipps, C. (1994) *Beyond Testing: Towards a Theory of Educational Assessment*, London: Falmer Press.

Gipps, C. (1996) 'Assessment for the millennium: form, function and feedback', based on an inaugural lecture delivered at the Institute of Education, University of London, June 6th

Graves, N.J. (1975) *Geography in Education*, London: Heineman.

Hall, E. and Moseley, D. (2005) 'Is there a role for learning styles in personalised education and training?', *International Journal of Lifelong Education*, 24 (3), pp.243-255.

Hammersley-Fletcher, L. and Mangan, J. (2004) 'Positive primary, negative secondary – attitudes to target setting in schools' *Paper presented at the British Educational Research Association Annual Conference, University of Manchester, 16-18 September 2004.*

Hargreaves, D. (2004a) *Personalising Learning 1: next steps in working laterally*, London: Specialist Schools Trust.

Hargreaves, D. (2004b) *Personalising Learning 2: student voice and assessment for Learning*, London: Specialist Schools Trust.

Hargreaves, D. (2005) *Personalising Learning 3: Learning to learn and the new Technologies*, London: Specialist Schools Trust.

Hargreaves, E. (2005) 'Assessment for learning? Thinking outside the (black) box', *Cambridge Journal of Education*, 35 (2), pp. 213 – 224.

Harlen, W. and James, M. (1997) 'Assessment and learning: differences and relationships between formative and summative assessment', *Assessment in Education: principles, policy and practice*, 4(3), pp. 365–379.

Harris, S., Nixon, J. and Ruddock, J. (1993) 'School work, homework and gender', *Gender and Education*, 5, pp. 5–9.

Hattie, J. A. C. (2009) *Visible Learning A Synthesis of Over 800 Meta-analyses Relating to Achievement*, London: Routledge.

Haythornthwaite, C. (2009) 'Participatory transformations' in W. Cope & M. Kalantzis (eds.), *Ubiquitous Learning*. Champaign, IL: University of Illinois.

Hertzberger, H. (2008) *Space and Learning*, Amsterdam: 010 Uitgeverij.

Illeris, K. (2008) *How we Learn: Learning and Non-Learning in School and Beyond*, London: Routledge.

James, M. (2000) 'Measured lives: The rise of assessment as the engine of change in English schools', *The Curriculum Journal*, 11(3), pp. 343-364.

James, M. and Gipps, C. (1998). 'Broadening the basis of assessment to prevent the narrowing of learning', *The Curriculum Journal*, 9, pp. 285-297.

Jarvis, P. (2006) *Towards a comprehensive theory of human learning: lifelong learning and the learning society, volume 1*, London: Routledge.

Job, D.A. (1996) 'Environmental Education', in Kent A. et al. *Geography in Education*.

Johannesson, I. A. (2004) 'To Teach Boys and Girls: a pro-feminist perspective on the boys' debate in Iceland', *Educational Review*, 56(1), pp. 33-42.

Kelly, A. (1988) 'Gender differences in teacher-pupil interaction: a meta-analytic review', *Research in Education*, 39, pp. 1-23

Kent, A., Lambert, D., Naish, M. and Slater, F. (eds.) *Geography in Education: Viewpoints on Teaching and Learning* Cambridge: Cambridge University Press.

Kemmis, S. (1993) 'Action Research' in Hammersley (ed) *Educational Research: current issues*, Milton Keynes: The Open University.

Klenowski, V. (1995) 'Student self-evaluation processes in student-centred teaching and learning contexts of Australia and England', *Assessment in Education: Principles, Policy and Practice*, 2(2), pp. 145–163.

Kniveton, B.H. (1996) 'Does group working improve boys performance in a class learning task?', *Curriculum*, 17(2), pp. 94-101.

Johnson, M. (2004a) *Personalised Learning - an Emperor's Outfit*, London: Institute for Public Policy Research.

Johnson, M. (2004b) 'Personalised Learning – New Directions for schools?', *New Economy*, 1 (4), pp.224-228.

Kolb, D. A. (1984) *Experiential Learning: experience as the source of learning and development*, New Jersey: Prentice-Hall.

Lather, P. (1993) 'Fertile Obsession: Validity after Post-structuralism', *The Sociological Quarterly*, 34 (4), pp. 673-693.

Lawton, D. (1980) *The Politics of the School Curriculum*, London: Routledge and Keegan Paul.

Leadbeater, C. (2004) *Personalisation through participation. A new script for public services*, London: Demos.

Leadbeater, C. (2005) *The Shape of Things to Come: Personalised Learning Through Collaboration*, Nottingham: DfES.

Leat, D. (ed.) (1998) *Thinking through Geography*. Cambridge: Chris Kington.

Lightbody, P. Siann, G., Stocks, R. and Walsh, D. (1996) 'Motivation and attribution at secondary school: The role of gender', *Educational Studies*, 22 (1), pp. 13-25.

Lipman, M. (2003) *Thinking in Education*, Cambridge: Cambridge University Press.

Little, D. (1991) *Learner Autonomy. 1: Definitions, Issues and Problems*, Dublin: Authentik.

Lochel, E. (1983) 'Sex differences in achievement motivation', in Jaspars, J., Fincham, F.D. and Hewstone, M. (eds.), *Attribution Theory and Research: Conceptual, Developmental and Social Dimensions*, London: Academic Press.

MacIntyre, C. (2000) *The art of action research in the classroom*, London: David Fulton.

Macmurray, J. (1933) *Interpreting the Universe*, London: Faber.

Malone, L., Palmer, A.M. and Voigt, C.L. (2002) *Mapping Our World: GIS Lessons for Educators*, ESRI Press.

Marsden, B. (1995) *Geography 11-16 Rekindling Good Practice*, London: David Fulton Publishers.

Marsden, W. (1997) 'Taking the Geography out of Geographical Education: some historical pointers', *Geography*, 82(3), pp. 241-252.

Marsh, C.J. (2004) *Key Concepts for Understanding Curriculum (3rd Ed)*, London: Routledge-Falmer.

Matthews, J.A. and Herbert, D.T. (eds.) *Unifying Geography: common heritage, shared future*, Abingdon: Routledge.

Maw, J. (1999) 'League tables and the press -value added?', *Curriculum Journal*, 10 (1), pp. 3 – 10.

Mayer, R.E. (1998) 'Cognitive, metacognitive, and motivational aspects of problem solving', *Instructional Science*, 26, pp. 49-63.

McNamara, D. (1991) 'Vernacular Pedagogy', *British Journal of Educational Studies*, 39 (3), pp. 297-310.

McNiff, J. (1993) *Teaching as learning: an action research approach*, London, Routledge.

McNiff, J. and Whitehead, J. (2005) *All You Need To Know About Action Research*, London: Sage publications Ltd.

Merrett, F., and Wheldall, K. (1992) 'Teachers' use of praise and reprimands to boys and girls', *Educational Review*, 44, pp. 73-79.

Milliband, D. (2003) '*Personalised Learning: Building a New Relationship with School's* North of England Education Conference, Belfast. London: DfES.

Milliband, D. (2004) *Choice and Voice in Personalised Learning*. London: DfES Innovation Unit/Demos/OECD Conference 'Personalising Education: the Future of Public Sector Reform.'

Morgan, J. and Lambert, D. (2005) *Teaching School Subjects: geography*, London: Routledge

Moseley, D. , Baumfield, V. , Elliott, J. , Gregson, M. , Higgins, S. , Lin, M. , Miller, J. , Newton, D. and Robson, S. (2004) *Thinking skill frameworks for post-16 learners: an evaluation*, London: Learning and Skills Research Centre.

Moseley, D., Baumfield, V., Elliott, J., Gregson, M., Higgins, S., Miller, J., and Newton, D.P. (2005) *Frameworks for Thinking: A Handbook for Teaching and Learning*, Cambridge: CUP.

Murphy, P. (1995) 'Sources of inequity: understanding students' responses to assessment.', *Assessment in Education*, 2(3).

Murphy, P. and Elwood, J. (1998) 'Gendered learning inside and outside school: influences on achievement', in Epstein, D., Elwood, J., Hey, V. and Maw, J. (eds) *Failing Boys? Issues in Gender and Achievement*, Buckingham: Open University Press, pp. 162 – 181.

Murphy, R.J.L. (1982) 'Sex differences in objective test performance', *British Journal of Educational Psychology*, 52, pp. 213-219.

Naish, M. (2004) *Initial Evaluation of the Impact of the Pilot GCSE*

National Research Council (2006) *Learning to Think Spatially: GIS as a Support System in the K-12 Curriculum*, National Academies Press.

Newton, P. E.(2007) 'Clarifying the purposes of educational assessment', *Assessment in Education: Principles, Policy & Practice*, 14 (2), pp. 149 – 170.

Norris, N. (1997) 'Error, bias and validity in qualitative research', *Educational Action Research*, 5 (1), pp. 172 – 176.

Oakley, A. (1972) *Sex, Gender and Society*, London: Temple Smith.

OCR (2003) *OCR GCSE in Geography (Pilot)*, 1949.

OCR (2004) *GCSE Geography Pilot Evaluation*.

OECD (2008) *Innovating to learn, learning to innovate*, Milton Keynes: Centre for Educational Research and Innovation.

OfSTED (2003) *Good Assessment in Secondary Schools*, Ofsted publications section.

OfSTED (1996) *Subjects and Standards. Issues for school development arising from OFSTED inspection findings 1994-95*, London: HMSO.

Opie, C. (2004) *Doing Educational research*, London: Sage.

Perrenoud, P. (1998) 'From formative evaluation to a controlled regulation of learning processes. Towards a wider conceptual field', *Assessment in Education*, 5(1), pp. 85–102.

Portelli, J.P. (1987) 'On defining curriculum', *Journal of Curriculum and Supervision*, 2(4), pp. 354-367.

Powney, J. and Watts, M. (1987) *Interviewing in Educational Research*, London: Routledge and Keegan Paul.

Pring, R. (2000) *Philosophy of Educational Research*, London: Continuum.

Pring, R., Hayward, G., Hodgson, A. and Johnson, J. (2009) *Education for All: The future of education and raining for 14-19 year olds*, London: Routledge.

QCA (2004) *GCSE Geography Pilot Evaluation Report*

QCA (2006) *Evaluation of the new and Pilot qualifications – OCR Pilot GCSE in Geography, QCA Final Report*

Rawling, E. (2001) *Changing the Subject: The Impact of National Policy on School Geography 1980-2000*, Sheffield: Geographical Association.

RBA Research Ltd (2003) *Evaluation of Geography Course Pilot*.

Resnick L. and Resnick D. (1992) 'Assessing the thinking curriculum', in Gifford B. and O'Connor M. (eds) *Future Assessments: Changing Views of Aptitude, Achievement and Instruction*, Boston MA: Kluwer.

Rey, J. (2006) 'Welcome to the BLOGOSPHERE: The Educational Use of Blogs (aka Edublogs)', *Kappa Delta Pi Record*, 42(4), pp.175-177.

Roberts, M. (2003) *Learning Through Enquiry*, Sheffield: Geographical Association.

Roberts, M. (2006) 'Geographical Enquiry', in Balderstone, D. (ed) *Secondary Geography Handbook*, Sheffield: Geographical Association.

Roberts, T-A. (1991) 'Gender and the influence of evaluations on self assessments in achievement settings', *Psychological Bulletin*, 109, pp. 297-308.

Robson, C. (1993). *Real world research: A resource for social scientists and practitioners-researchers*. Blackwell: Oxford University.

Rooney, R. (2007) 'Using success criteria', *Teaching Geography*, 32 (1), pp. 51-55.

Rudd, T., Sutch, D. and Facer, K. (2006) *Towards new learning networks* (Accessed on 22/11/07 at www.futurelab.org.uk/research/opening_education.htm) pp. 28

Sadler, D.R. (1989) 'Formative assessment and the design of instructional systems', *Instructional Science*, 18(2), pp.119-144.

Sarantakos, S. (2005) *Social Research*, Basingstoke: Palgrave Macmillan.

Savin-Baden, M. (2008) *Learning Spaces: Creating Opportunities for Knowledge Creation in Academic Life: Creating Opportunities for Knowledge Creation in Academic Life*, Milton Keynes: Open University Press.

Sawyer, R.K. (2006) *The Cambridge Handbook of the Learning Sciences*, Cambridge: Cambridge University Press.

Scardamalia, M. and Bereiter, C. (2006). 'Knowledge building: Theory, pedagogy, and technology', in K. Sawyer (ed.), *Cambridge Handbook of the Learning Sciences*, New York: Cambridge University Press, pp.97-118.

Schraw, G. and Moshman, D. (1995) 'Metacognitive Theories', *Educational Psychology Review*, 7(4), pp. 351–371.

Schroeder, W.R. (2005) *Continental Philosophy. A Critical Approach*, London: Blackwell.

Scriven, M. (1967) 'The methodology of evaluation', in R. Tyler, R. Gagne and M. Scriven
Perspectives on Curriculum Evaluation, Chicago: Rand McNally and Co.

Scruton, R., Ellis-Jones, A. and O'Keefe, D. (1985) *Education and Indoctrination*. Harrow:
Educational Research Centre.

Sebba, J., Brown, N., Steward, S., Galton, M. and James, M. (2007) *An Investigation of
Personalised Learning Approaches Used by Schools*, Department for Education and Skills,
Research Report RR843.

Shayer, M. and Adey, P. (eds.) (2002) *Learning Intelligence Cognitive Acceleration Across the
Curriculum from 5 to 15 years*, Buckingham: Open University Press.

Shepard, L.A. (2000) 'The Role of Assessment in a Learning Culture', *Educational Researcher*,
29(7), pp. 4-14.

Slater, F. (1996) 'Illustrating research in geography education', in A. Kent, D. Lambert, M. Naish, and F. Slater (eds.), *Geography in Education: Viewpoints on Teaching and Learning*, Cambridge: Cambridge University Press, pp. 291-320.

Smith, E. (2003) 'Understanding Underachievement: an investigation into the differential achievement of secondary school pupils', *British Journal of Sociology of Education*, 24(5), pp. 575-586.

Smith, E. and Gorard, S. (2005) 'They don't give us our marks': the role of formative feedback in student progress', *Assessment in Education: Principles, Policy & Practice*, 12 (1), pp. 21 – 38.

Standish, A. (2004) 'Valuing (Adult) Geographic Knowledge', *Geography*, 89(1), pp. 89–91.

Standish, A. (2007) 'Geography used to be about maps' in Whelan, R. (ed.) *The Corruption of the Curriculum*, London, Civitas.

Stanworth, M. (1981) *Gender and Schooling*, London: Hutchinson.

Stein, J. (2005) 'Brain and Learning' in P. Jarvis and S. Parker (eds.) *Human Learning: A Holistic Perspective*, London: Routledge-Falmer, pp. 32-49.

Stenhouse, L. (1975) *Introduction to Curriculum Research and Development*, Heinemann: London.

Stimpson, P. (1996) 'Reconceptualising assessment in geography', in R. Gerber and J. Lidstone (eds.) *Developments and Directions in Geographical Education*, UK: Multilingual Matters Ltd.

Stobart, G., Elwood, J., Hayden, M., White, J. and Mason, K. (1992) *Differential Performance in Examinations at 16+: English and Mathematics*, London: University of London Examinations and Assessment Council.

Stobart, G. and Gipps, C. (1998) 'The underachievement debate: fairness and equity in assessment', *British Journal of Curriculum and Assessment*, 8(3), pp. 43–49.

Tan, O-S. (2007) 'Problem-based learning pedagogies: psychological Processes and enhancement of intelligences', *Educational Research for Policy and Practice*, 6, pp.101-114.

Taras, M. (2005) 'Assessment – summative and formative – some theoretical reflections', *British Journal of Educational Studies*, 53 (4), pp.466-478.

Taylor, A. (2009) *Linking Architecture and Education: Sustainable Design of Learning Environments*, University of New Mexico Press.

Torrance, H. (1993). 'Formative assessment: Some theoretical problems and empirical questions', *Cambridge Journal of Education*, 23(3), pp. 333–343.

Torrance, H. (2007) 'Assessment as learning? How the use of explicit learning objectives, assessment criteria and feedback in post-secondary education and training can come to dominate learning', *Assessment in Education: Principles, Policy & Practice*, 14 (3), pp. 281 – 294.

Veenman, M.V.J. (1993) *Intellectual ability and metacognitive skill: determinants of discovery learning in computerized learning environments*, Amsterdam: University of Amsterdam.

Walford, R. (2001) *Geography in British Schools 1850-2000*, London: Woburn Press.

Watkins, C. and Mortimore, P. (1999) 'Pedagogy: What do we know?', in P. Mortimore (ed.) *Understanding Pedagogy and its Impact on Learning*, London: Paul Chapman Publishing Ltd., pp. 1-19.

Weeden, P., Winter, J. and Broadfoot, P. (2002) *Assessment: What's in it for schools?*, London: Routledge-Falmer.

Weeden, P. and Hopkin, J. (2006) 'Assessment for learning in geography' in D. Balderstone (ed.), *Secondary Geography Handbook*, Sheffield: Geographical Association, pp. 414-433.

West - Burnham. J. (2005) *Personalised Learning: Transforming Education for Every Child*, Stafford: Network Education Press.

Whitehead, J. (1989) 'Creating a living educational theory from questions of the kind, "How do I improve my practice?"', *Cambridge Journal of Education*, 19 (1), pp. 137–153.

Whitehead, J. (2008) 'Using a living theory methodology in improving practice and generating educational knowledge in living theories', *Educational Journal of Living Theories*, 1(1), pp.103-126.

Whitehead, J. (2009) 'Generating living theory and understanding in action research studies', *Action Research*, 7(1), pp. 85–99.

Wiegand, P. (1996) 'Interviews' in M. Williams (ed.), *Understanding Geographical and Environmental Education – The Role of Research*, London: Cassell, pp.112-122.

William, D. and Bartholomew, H. (2004) 'It's not which school but which set you're in that matters: the influence of ability grouping practices on student progress in mathematics', *British Educational Research Journal*, 30 (2), pp. 279-293.

William, D., Lee, C., Harrison, C., and Black, P. J. (2004) 'Teachers developing assessment for learning: impact on student achievement', *Assessment in Education: Principles Policy and Practice*, 11(1), pp. 49-65.

Wilkins, C. and Wood, P.B. (2009) 'Initial teacher education in the panopticon', *Journal of Education for Teaching*, 35(3), pp.283-297.

Winter, R. (2002) 'Truth or fiction: problems of validity and authenticity in narratives of action research', *Educational Action Research*, 10 (1), pp. 143 – 154.

Wood, D. (1988) *How Children Think and Learn*, Oxford: Blackwell.

Wood, P., Hymer, B. and Michel D. (2007) *Dilemma-based Learning in the Humanities: Integrating Social, Emotional and Thinking Skills*, London: Chris Kington Publishers.

Wood, P. (2009a) 'Advances in E-learning – the case of blogging in U.K. school geography', *Research in Geographic Education*, 11 (2), pp. 28-46.

Wood, P. (2009) 'What helps to improve Assessment for Learning in the geography classroom?' in Weeden, P. and Butt, G. (eds) *Assessing Progress in Your Key Stage 3 Geography Curriculum*, Sheffield, Geographical Association.

Wood, P. (2005) 'In defence of the New Agenda', *Geography*, 90(1), pp.84-89.

Wood, P. (2002) 'Closing the gender gap in geography: update 1', *Teaching Geography*, 27 (1), pp. 41-43.

Younger, M., Warrington, M., and Williams, J. (1999) 'The gender gap and classroom interactions: reality and rhetoric?', *British Journal of Sociology of Education*, 20, pp. 325-41.