DOCUMENT RESUME

ED 349 218 SO 022 351

AUTHOR Holroyd, Colin; Munn, Pamela
TITLE Investigating in the Social Subjects. SCRE Project Report No. 34.
INSTITUTION Scottish Council for Research in Education.
SPONS AGENCY Scottish Education Dept., Edinburgh.
REPORT NO ISBN-0-947833-65
PUB DATE Feb 92
NOTE 50p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Educational Policy; Educational Research; Foreign Countries; Intermediate Grades; Research Skills; Secondary Education; Social Studies; *Student Attitudes; Student Educational Objectives; *Student Research; *Teacher Attitudes
IDENTIFIERS *Scotland

ABSTRACT

This report discusses findings from a research project examining the demands made on students and teachers by the "investigations" (or research) required of students in social subjects in Scottish schools. Students and teachers in six secondary schools in Scotland were interviewed, and it was found that teachers were seriously concerned about the demands made by the investigations upon them. However, students found investigations enjoyable and valuable, and they did not think they were particularly difficult. The report also contains a brief set of recommendations, among which it was urged that more definitive guidelines concerning the manner in which investigations are conducted be provided to both teachers and students. (DB)

Investigating in the Social Subjects

Colin Holroyd
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SCRE PROJECT REPORTS

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The Scottish Council for Research in Education
15 St John Street, Edinburgh EH8 8JR

ISBN 0 947833 65

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Report arising from the Investigation in the Social Subjects Project (R/9/13) funded by Scottish Office Education Department between March 1991 and July 1991.

The views expressed are those of the authors and are not necessarily those of the Scottish Council for Research in Education or the Scottish Office Education Department.

Printed by the Scottish Council for Research in Education, 15 St John Street, Edinburgh EH8 8JR

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ACKNOWLEDGEMENTS

In six Scottish secondary schools the headteacher, various members of staff and groups of pupils gave time to us generously; we are grateful to all of them.

Harriet Black carried out a preliminary survey of relevant documents.

Additional information was provided by each of the following:

Brian Boyd, Chief Adviser, Strathclyde Regional Council
Tom McMillan, Senior Adviser, Lothian Regional Council
Peter Tymms, Moray House College of Education
Hugh Gordon, Senior Examinations Officer, Scottish Examinations Board

We received helpful guidance from Russell Dick, HMI, Scottish Office Education Department.

Janette Finlay typed this report quickly and accurately.

The views expressed in this report are those of the authors and do not necessarily reflect those of SCRE or SOED (who funded the study).

Authors' Note

The timescale of the work was such that in writing the report 'we did not have enough time to be brief'. It is suggested that readers in a hurry should concentrate on the final section of Chapter 4, the middle section of Chapter 5, and Chapter 6. The report is preceded by a one-page summary of our main findings.

Colin Holroyd
Pamela Munn
July 1991

SUMMARY OF MAIN FINDINGS

INVESTIGATING IN THE SOCIAL SUBJECTS

SCRE has conducted a small-scale research study into the demands on pupils and teachers made by investigations in the social subjects at Standard Grade.

1 All teachers of social subjects (within this study) felt that their subject would be diminished without an investigation; they were uneasy about the cumulative effects of the 'proliferation' of investigations across the curriculum.

2 All teachers (within this study) were seriously concerned about the demands made by investigations upon them.

3 Some pupils and many teachers experienced a high level of stress in February and March 1991.

4 Pupils found investigations enjoyable and valuable; they did not think they were particularly difficult.

5 Brief and clear written guidelines are necessary for both teachers and pupils on what exactly has to be done for the investigation — and when.

6 Separate social subject departments do not often learn from each other or plan joint action.

7 Senior management have been sympathetic and have responded positively on a number of issues; in general they have been slow to recognise the whole-school implications of investigations and have not been pro-active.

The report ends with a brief set of recommendations for social subject departments, senior mangement, the Scottish Examination Board, the Scottish Consultative Council on the Curriculum and the Scottish Office Education Department.

RESEARCH QUESTIONS AND PROCEDURE

Research questions

SCRE was pleased to be asked to conduct a small-scale research study into the demands of investigations at Standard Grade in the social subjects.

Research questions were formulated to focus our work. These were as follows:

- What are the skills required to undertake investigations? To what extent are the skills common across history, geography and modern studies? Are there skills which are distinctive for each subject?
- What kinds of demands are made on pupils studying these subjects as far as investigations are concerned?
- Are social subjects teachers and senior staff aware of the skills and demands of investigations across the social subjects?
- What effective school and departmental responses are there to these demands?
- Are pupils who study more than one social subject aware of any distinctive or general skills in investigations?

Limitations of time and resources required that the research strategy adopted be one of multi-site case-study, with highly condensed fieldwork — supplemented by a study of appropriate documentation.

The schools

It was agreed that the research should be carried out in six secondary schools. Four of these were nominated by HMIs as adopting good practice in (at least some of) the social subjects; the remaining two were chosen at random, nothing being known to us about the effectiveness of the social subjects teaching in these schools. Two of the schools were in Glasgow, two in Edinburgh, one in Dunbarton Division of Strathclyde Region and one in Central Region.

The interview schedules

Schedules were drawn up for three sets of interviewees:

a. the member of the senior management team of each school nominated by the headteacher as most likely to be familiar with the demands of Standard Grade investigations
b. principal teachers of geography, history and modern studies

c. pupils who had sat Standard Grade examinations in geography, history, modern studies, contemporary social studies (CSS) or in more than one of these.

The schedules are available from SCRE. It should be noted that they build in a significant amount of triangulation: principal teachers are asked what aspects of investigations they have raised with senior management — and senior management are asked what aspects have been raised with them; pupils are asked what they found difficult — teachers are asked what was demanding for them because pupils experienced difficulty. We found an internal Inspectorate report particularly helpful in suggesting appropriate content for the interview schedules.

The interviewees

a. Four assistant headteachers and one depute headteacher were interviewed. (The appropriate assistant head in the sixth school was unavailable on our first visit and absent through illness on the second.)

b. Six principal teachers of geography and six of history were interviewed, so also were four principal teachers of modern studies, one assistant principal of modern studies (with responsibility for the subject) and one principal teacher of business studies (with responsibility for teaching Standard Grade Economics). Most of the analyses which follow are based on the responses of the first seventeen of these eighteen.

c. Pupils were interviewed in groups of, usually, five from each school. Twenty-nine pupils in total were involved; only* two of these had sat two social subjects; the 'pupil' data reported later thus refer to thirty-one subject presentations.

Schools had difficulties — due to a movement to new timetables and unpredictable absenteeism — in providing pupils in accordance with the request of the researchers. Nevertheless a reasonably satisfactory sample was obtained.

*Lothian Region are conducting a longitudinal study of the workload of Standard Grade. They have surveyed 643 pupils in S3 in six schools; only 25 of these pupils (3.9%) are following *two* social subjects at Standard Grade; 3 pupils are doing three subjects (Tymms, 1991).

Table 1.1: Numbers of pupils interviewed (Total pupils = 29; Total subjects = 31)

	Level of award expected			
	Foundation	General	Credit	Total
History	4	2	2	8
Geography	2	7	4	13
Modern Studies	1	4	0	5
CSS	3	2	0	5
Total	**10**	**15**	**6**	**31**

The timing

Interviews were conducted at the times most convenient to the schools. Members of the senior management team and principal teachers were interviewed between 30 April and 21 May (during the SCE examination period); pupils were seen after the exam period — between 10 and 14 June. It should be noted that the research was conducted at an early stage of implementation of Standard Grade social subjects courses and at a time of year when the demands of investigations were likely to be fresh in the minds of teachers.

Interviews lasted, on average, 35 minutes with senior management members, 55 minutes with principal teachers and 40 minutes with pupils. Since the interviews were focused and specific, comments were noted, summarised and checked with the interviewees.

Note: The nature of our research claims

The intensive, multi-site case studies of social subjects depatments is six schools allows us to raise issues and concerns without claiming that these are shared by all social subjects departments in Scotland. It is noteworthy, however, that common concerns were expressed by the six schools and by representatives of eighteen subject departments; this suggests that these concerns may be echoed by other schools. We have, of course, no firm statistical evidence for this but HMIs and others reading our findings will be able to place them in the context of their own knowledge and observations of the demands of Standard Grade in the social subjects.

INVESTIGATIONS: WHAT ARE THEY? WHEN WERE THEY DONE?

What *are* investigations?

Geography, history modern studies and contemporary social studies have, as Standard Grade courses, the same three assessable elements:

- Knowledge and understanding
- Evaluating
- Investigating.

Except in the case of contemporary social studies, the first two of these are externally assessed by examination. The final award for Investigating is based on the school's internal assessment of each pupil's work, moderated by the Scottish Examination Board. Each element carries the same weight in determining the overall award for a subject presentation.

The nature and purposes of investigations within these social subjects can be seen from the following:

> The skills to be developed within Investigating are:
> — planning a historical investigation within an agreed, identified area of study
> — selecting, recording and classifying information required for the conduct of the investigation
> — presenting the outcome of the investigation
> [History]

> [The candidate has demonstrated...] ability to plan and carry out an investigation, devising appropriate aims, selecting and using appropriate techniques for collecting and analysing information and presenting the findings logically and coherently with valid, reasoned conclusions.
> [Geography: Summary Grade Related Criteria - Credit level]

> The course should promote ability in pupils to synthesise social science skills by:
> — planning investigations
> — identifying, accessing and processing information
> — communicating findings and/or conclusions.
> [Modern Studies]

> This element [Investigating] is concerned with finding out about the contemporary society in which pupils live, about the environment of that society and how it has developed. To achieve this, pupils will need to acquire information from oral, written and visual sources as well as from direct observation in fieldwork. They will require to select relevant and useful information and to frame questions. Thereafter they should be able to convey information about contemporary society in a variety of ways.
> [Contemporary Social Studies]

The essential skills of investigations in these four social subjects are thus:

- planning an enquiry
- collecting, analysing and evaluating information
- presenting findings/conclusions.

The formal arrangements for the courses are prescribed by the Scottish Examination Board. Various written materials to guide teachers in the teaching and assessment of social subjects have been supplied by national bodies. A number of national and other in-service courses have been held; some of these have also resulted in support materials. Other material has come from regional and divisional sources, eg social subjects advisers.

What time did teachers give to investigations? When?

Firstly, what time did the social subjects have as a whole for Standard Grade? Two schools operating 40 minute periods allocated 4 of these in each of S3 and S4; a third, with the same length of period gave 5 in each year. Two schools operating 55 minute periods allocated 3 of these in each of S3 and S4; one school with 63 minute periods allocated 2 of these in S3 and 3 in S4 (to each social subject). All schools were thus able to give more time than the SCCC recommended minimum for each Standard Grade course; one school provided 25% more time overall than most of the others.

Investigating ranks equally with two other assessable elements; one might simplistically expect it to receive one-third of the available time. Most teachers were, however, understandably unwilling even to estimate the proportion of the total time given to Investigating: the time would cover not only the main investigation, but also time given to skills development throughout the course. Several teachers also said the latter could not be estimated as when one was ostensibly teaching for content understanding one could also be contributing to skills development. Those teachers who hazarded a guess said that the time given to Investigating was significantly less than a third (in one case only 10%), because of the difficulties in getting through the content of the syllabus in the detail that seemed to be suggested by Central Support Group materials.

There was no single predominant pattern of timing of aspects of investigation throughout the course. Some provided three or four blocks of two or three weeks at a variety of times in the year; others provided an eight-week block in the second term of S4. One pattern of distribution tried but generally found wanting was a single period per week throughout the major part of the course; it was just too difficult to sustain pupil motivation. The variety of the distributions adopted can be seen from the data which follow.

Table 2.1: Timing of main investigations

	Month	Number of teachers (N = 17)
Month of launch of main investigation	May – S3	3
	June – S3	4
	Sept – S4	5
	Oct – S4	2
	Dec – S4	2
	Jan – S4	1
Empirical work to be completed	Dec – S4	4
	Jan – S4	5
	Feb – S4	7
	Mar – S4	1
Final report to be submitted	Jan – S4	1
	Feb – S4	2
	Mar – S4	14

There was little obvious difference from one social subject to another. On the whole, modern studies teachers launched the investigation earlier than others (usually in May/June of S3); however, those geography teachers who managed to arrange a period of extended fieldwork — from which they planned that investigations should emerge — did so also in May/June of S3.

Every teacher except one had either adapted their teaching in S1 or S2 to incorporate investigations (or elements of them) or — in two cases — had made plans to do this next session. The simplest provision was for 'one mini-investigation in S2'; the most complex was a system to tackle individual skills and collection of skills in a coherent and progressive way from the beginning of S1.

INVESTIGATIONS: WHAT DID PUPILS THINK?

What did pupils think of investigations?

29 pupils (accounting for 31 social subject presentations) were asked to give a summary verdict on the enjoyment, difficulty and value of investigations.

Table 3.1: Pupils' views of the investigations

	Yes	No	'Some bits'
Is it enjoyable?	17	7	7
Is it difficult?	4	17	10
Is it of value?	29	2	-

The pupils we interviewed gave every appearance of treating our questions thoughtfully and seriously; the uninhibited and occasionally startling comments they made did not suggest they were much concerned with telling the interviewer what they thought he wished to hear. Although some caution is appropriate in interpreting the above figures, nevertheless they are reassuring: only 23% found the investigation wholly lacking in enjoyment, only 13% found the investigation difficult overall; only 6% thought the investigation had no value.

Pupils who thought the investigation valuable were asked to say why.

Table 3.2: Reasons for thinking investigations valuable

	Number of mentions
Finding things out for yourself helps you understand better	10
You can get onto a new topic area that you are interested in	8
It helps you get better marks — it's not an exam*	7
You get to know people outside the school; helps you talk to strangers; helps understand your own community	6

*Exams suit the brainy ones — thickos like us get a better chance.

We find it encouraging that in 17 out of 31 cases the investigation was said to be easy. It is of course possible that this is a considerable tribute to the skills of teachers in preparing pupils for the independent work involved in the investigation and for giving them the kind of sensitive and

unobtrusive guidance which makes the work seem easy even when it isn't. It does look as if, however demanding and stressful investigations are for teachers, pupils treat them with a degree of insouciance. Are investigations only a problem for teachers — and not for the pupils they teach?

The two pupils who did investigations in two social subjects did not think the investigations were similar; the different subject matter seemed to make the skills feel different. Other pupils recognised they did things that could be called 'Investigations' in other subjects (for example in mathematics and home economics) but did not see these as very similar to investigations in the social subjects.

In the interviews we asked pupils to react to nineteen features of investigations 'that some other pupils had said were difficult'; pupils were asked to give a quick response to each — 'that was difficult' or 'that was easy' or 'that was not easy and not difficult – somewhere in between' or ' I didn't have to do that – it doesn't apply'. A total of 589 such judgements were made (31 x 19).

Table 3.3: Judgements on aspects of investigations

	Number of judgements	% of 'applicable' judgements
Difficult	122	29
Easy	225	53
Half and half	81	19
Not applicable	161	-

There is again little evidence that pupils found the investigation much of a problem: over half of their total judgements on the aspects of investigations that applied to them were that these were 'easy'; less than a third of aspects were said to be 'difficult'.

It could be that investigations in one of the social subjects are very difficult and all the rest are easy; or perhaps that investigations are very difficult for pupils of one level of ability and easy for those of other levels. The evidence we have supports **neither** of these conclusions.

Pupils doing modern studies made marginally more judgements that aspects of the investigation were difficult than did pupils taking geography and history (but then no pupils expected a Credit award in modern studies). Pupils likely to achieve Credit or General awards made somewhate lower percentages of the judgement 'difficult' than did those likely to achieve a Foundation award (26% as against 34%). It seems that 'less-able' pupils found investigations somewhat more difficult than did their abler colleagues, but they still didn't see investigations as difficult overall.

We conclude that pupils are not as worried about investigation as teachers are. This is not the complete picture, of course; some pupils worry a great deal.

> The investigation was easy till my enthusiasm wore off. At the beginning of March I was up till after midnight for four nights running trying to get it all together. My mother was getting really worried and angry about me — but I told her it was the same with a lot of my friends.
>
> There was pressure; but not unreasonable till the end when I thought I was going mad. This pressure was self-imposed; I realised I should have done all the work a lot earlier. But I still stayed up till 5 in the morning.

What aspects did pupils find difficult?

Pupils were presented with a list of nineteen aspects of social subject investigations and asked to identify the aspects they had found difficult.

Table 3.4: What pupils most often said was difficult

	Number of judgements (N = 31)
Finding the time to do everything	22
Organising and planning the investigation as a whole	20
Evaluating data	14
Analysing data	12
Extracting information from written sources	11
Drawing up a questionnaire	7
Writing the final report	6
Persuading people to take part	6

Asked if there was anything missing from this list, the only point added (by six pupils) was 'getting from the general topic, to the exact questions to be answered'. This might have been anticipated by us; it is a significant aspect that it would have been useful to present to all pupils.

Did pupils think they were demanding?

Pupils were asked how much help they got from their teachers with their investigations, whether they would have liked more and how much help they got from people at home.

Three pupils said they had received no help at all from teachers; nineteen said little or very little and nine said a lot or quite a lot. Should teachers be horrified at the ingratitude of their pupils? Or delighted that their help was so skilful and unobtrusive that pupils felt they were engaged on a genuinely independent study? Although so few pupils said they had received much help, only three out of the thirty-one said they would have liked more (more help in finding the right books; more guidance on keeping the investigation within manageable limits; more help with everything because 'I got less than the brainy ones did').

Eight pupils said they had received a lot or quite a lot of help at home (this varied from 'gran was the subject of my history investigation', through 'dad helped write the report on his

word-processor' to 'mum supplied coffee to keep me awake'). Seven said they had got a little help at home (usually comments on things they had written); sixteen said they received no help at home.

The pupils were also asked if they had ever felt, during the investigation, that they were 'annoying' people. Pupils clearly thought this an unexpected question and produced an interesting range of thoughtful responses. Sixteen out of thirty-one felt they had been annoying.

Five said they had annoyed the subjects of the investigation:

> some of the people I tried to interview in the street were dead annoyed.
>
> my neighbours were sick of me asking questions.
>
> oh yes – the people in the old folks' home.

Three claimed to have annoyed their fellow pupils. Three realised they had put considerable demands on the school librarian by pestering him/her for books, trying to get on the data-base for information and trying to get at the word-processor. Three had annoyed their mothers by using the investigation as a reason or excuse for not going to bed at the usual time. Two felt they had annoyed their teacher: one of these was unsure 'she certainly made me feel that I was annoying her'; the other was very sure 'but that's what teachers are paid for — to be annoyed by their pupils'.

The conclusion would seem to be that pupils are relatively unaware of the routine, professional response to their demands — but acutely sensitive to unusual help and to emotionally charged responses.

INVESTIGATIONS: WHAT DID TEACHERS THINK?

Were teachers concerned?

All of the teachers we interviewed thought that the investigation was a valuable part of the Standard Grade course in their subject; they felt that their subject would be impoverished without the investigating element and they would be unhappy with any proposal to reduce its importance.

Nevertheless, when teachers were asked to give a general, overall rating to the level of concern that investigations had caused them in session 1990-1991, no teacher rated the level less than 'high' and eleven of the eighteen rated it 'very high'. Five teachers expected the level of concern to increase next session; two said it would decrease; the other eleven predicted it would be about the same.

Most of the teachers were presenting candidates for Standard Grade in their subject for the first time in 1991. Schools were phasing in Standard Grade in a wide variety of ways; in five of the six schools there was only one Standard Grade class in the subject for this the first run-through of the course; that class was often relatively small in size — class sizes in S4 ranged from 32 pupils to only 8, the average being 21; the majority of the classes covered only a part of the whole ability range. In all the schools visited more pupils were currently doing the subject in S3. Teachers expected the level of concern, indeed of stress, to rise next session when there would be a greater total number of pupils, more classes and more teachers involved, perhaps larger classes and perhaps pupils from the full ability range within one class. The interviewer used the word 'concern'; the respondents regularly introduced the word 'stress' in reply.

Teachers also pointed out that taking a class through a new course for the first time could quite reasonably be expected to be demanding and stressful. Next session they would have more experience, more confidence, more familiarity with assessment requirements and SEB procedures and more knowledge of the quality and appropriateness of the learning materials they had prepared or adapted. These factors would all contribute to a reduction in the level of concern next session.

The summary view of the future level of concern depended on the relative weighting individual teachers attached to the first set of factors (increased numbers and spread of ability) as opposed to the second set (increased experience and confidence). The majority predicted they would cancel each other out, ie the level of concern would stay roughly the same.

It may be asked if the level of concern caused by investigations is not just a feature of the demands made by implementing the Standard Grade course as a whole. Our evidence suggests that the investigation was the component of the new course that caused most concern:

> Don't misunderstand me; I *like* the investigation — but it is very demanding. The SEB just asks too much of Standard Grade pupils in the investigation. I regard myself as pretty competent; I shall be

> better prepared next year — but I know I shall be saying, 'Oh, my God, here comes the investigation again...'
>
> The idea of an investigation is good — but I wish to hell it wasn't here. It puts more pressure on me than any other part of the syllabus; I can see it being a hassle every year ...

It was very obvious in our initial approaches to headteachers that our enquiry was unusually welcome; the response was in all cases along these lines:

> Teachers will be happy to talk to you about investigations — it's a matter of real importance to them.

Most interviews with teachers ended with their saying things like:

> Thanks for listening to me; I feel better for getting all that off my chest; it's good to know that someone out there is looking into investigations; try and persuade 'them' to do something helpful...

Thus, all the teachers we spoke to, although they thought investigatons were valuable, at the same time felt a high, or very high, level of concern about them; about a third showed a level of concern that was tantamount to distress. It seems pupils were well able to detect this:

> My modern studies and history teachers were both good ... really very helpful ... but they got pretty ragged towards the end of the investigations.

There is a tough-minded response to all this: no-one ever said that curriculum innovation would be easy; it is entirely proper that teachers should show a high or very high level of concern; soon teachers' experience will have provided them with coping strategies which make the pressures seem reasonable. Although no doubt most teachers *will* adapt and survive, this is hardly good enough; in the interim, ways must be sought either to reduce the demands or to encourage effective response to them — or both.

Did pupil difficulties result in heavy demands on teachers?

Teachers were asked if the difficulties their pupils may have had with aspects of investigations resulted in heavy demands on them as teachers.

Table 4.1: Aspects of investigations said by teachers to pose heavy demands

	Number of mentions (N = 18)
Analysis of data	15
Time difficulties for pupils	14
Evaluating data	11
Drafting the report	9
Organising and planning investigations as a whole	8
Selection of topic	8
Finalising the report	6
Constructing questionnaires	5

There are things that pupils find difficult and thus teachers find demanding: finding the time to do things (and getting them done on time); analysis and evaluation of data; organising and planning the investigations as a whole. Pupils found the extraction of appropriate information difficult — but this isn't perceived by teachers as putting heavy demands on them. It is intriguing that teachers find that drafting of the report by pupils puts heavy demands on them — but pupils don't find it difficult. (Teachers seem to put a lot of skill into helping pupils draft reports — help which is not very obtrusive; some pupils then seem to think the work is finished and teachers report difficulties in motivating them to 're-do' the report to a final version.)

Was it the same in all subjects?

Some aspects of investigations may not appear in Tables 3.4 and 4.1 as difficult or demanding simply because they do not feature in all subjects; for example analysis and evaluation of data are more likely to feature because they occur in all the social subjects; constructing a questionnaire is more common in modern studies than history; the clarity and legibility of written sources is more likely to pose problems in history than in modern studies.

The tables which follow give pupil difficulties and consequent teacher demands in rank order of frequency of occurrence for each subject separately.

Table 4.2 Difficulties and demands in geography

Aspect	Rank order for pupil difficulty (N = 13)	Rank order for teacher demand (N = 6)
Investigations as a whole	1	4=
Finding the time	2	2
Evaluation of data	3	4=
Analysis of data	4	1
Extracting information	5	-
Deciding appropriate sample	6	8
Constructing questionnaire	7	8
Contextual knowledge	8	-
Drafting the report	-	3
Fieldwork	-	4

Pupils found some difficulty in extracting information from written sources and in learning that knowledge necessary to put their investigation in context; those difficulties were not seen by teachers as causing them any heavy demand (these are traditional aspects of the teacher's role about which they feel confident?). Report drafting and doing fieldwork were not perceived by pupils as difficult; but they were seen as demanding by geography teachers.

Table 4.3: Difficulties and demands in history

Aspect	Rank order for pupil difficulty (N = 8)	Rank order for teacher demand (N = 6)
Finding the time	1	2=
Investigations as a whole	2=	2=
Evaluation of data	2=	2=
Analysis of data	4=	1
Extracting information	4=	2=
Drafting a questionnaire	4=	-
Contextual knowledge	7	9
Finding a topic	8	6
Drafting the report	-	7
Shortage of computing hardware	-	8

The same aspects appear most difficult and demanding as for geography (finding the time, organising the investigation as a whole, the evaluation and analysis of data). Note however, that history teachers find the difficulties pupils have in extracting information and acquiring the necessary contextual knowledge more demanding than do geography teachers; this seems to stem from the greater variety of types of source used in history (and the fact that some sources pose problems of clarity and legibility) and the higher probability that some pupils will do their investigations in topic areas that can be quite unfamiliar to the teacher. Again teachers find it demanding to help pupils draft the report — but pupils were not aware of the difficulties; shortage

of computer hardware applies both to information data-bases and to the accessibility of word-processing facilities for pupils.

Table 4.4: Difficulties and demands in modern studies

Aspect	Rank order for pupil difficulty (N = 5)	Rank order for teacher demand (N = 5)
Investigation as a whole	1	6=
Finalising the report	2=	5
Evaluating data	2=	2=
Finding the time	4=	1
Analysis of data	4=	2=
Extracting information	4=	-
Finding the topic	4=	6=
Constructing a questionnaire	8	6=
Drafting the report	-	2=

The pattern is similar for the most difficult and demanding aspects. Again teachers found it demanding to help pupils to draft their reports; pupils do not see the task as difficult.

Did the difficulties and demands depend on pupil ability?

We have already reported that pupils likely to achieve a Foundation award found rather more aspects difficult than did pupils heading for General and Credit awards (34% of judgements as against 26%); the difference is not enormous and a larger sample would be necessary to be certain of its significance.

However, teachers were asked to talk about the aspects of difficulty in relation to the pupils they had taught. In a large majority of cases, teachers said that the less able the pupil the more difficulties they encountered in almost all aspects of investigations and thus the heavier the demands on them as teachers. There were exceptions: finding the topic, drafting and finalising the report were said to cause difficulties for pupils of all abilities, but for different reasons. The less able were said to have difficulty in deciding on topics that were both interesting to them and appropriate to the requirements; the most able found the selection of a topic difficult because 'they had the wit to realise how challenging it is to move from a general interest in an area to a precisely focused enquiry that has some hope of yielding meaningful results'. Less able pupils were said to find the production of the report difficult because (a) they lacked the 'basic skills' and (b) they had run out of enthusiasm and motivation; the more able found the report difficult because they had more to say than could be easily said within the required length.

The majority of teachers (12 out of 18) also said that we should not go automatically from a judgement that pupils found something difficult to the conclusion that this put heavy demands on

the teacher. The spread of ability in the class was a more important factor than level alone, the more mixed the ability of the pupils, the more demanding the class was to teach.

There is nothing very surprising or disconcerting about any of this. What is perhaps rather more interesting is that it was not uncommon for teachers to perceive the demands posed by the most able as being interesting challenges, whereas those from the least able were a stressful irritation. An able pupil who asks difficult questions or whose enthusiasm results in an over-lengthy draft poses a stimulating intellectual problem for the teacher; a less-able pupil whose lack of motivation results in a failure to meet deadlines or in behaviour disruptive to others is either making demands where the effective response is uncertain ('how do I motivate these pupils...?) or of a disciplinary rather than pedagogic nature.

Three of our schools seemed reasonably confident that they had found a teaching approach (resource-based learning) that was well-attuned to the needs of the less-able; the other three seemed, in some departments at least, to be finding it difficult to move on from their long tradition of effective teaching of the more able. Two quotations illuminate this difference:

> We are able to see the benefits in all these curriculum changes — but no-one should underestimate the cumulative effects of trying to implement all that's necessary.
>
> Increasingly I feel that my role has to include helping very talented and experienced teachers to change their methodology. The skills that we acquired in our early days of teaching are not the same ones that are needed now; the skills that we know we possess are not now the ones that are required and valued. I think my own strengths are as an inspirer of those who wish to learn; I rather like being a charismatic entertainer 'up-front' in the class. But now we have to be designers of tasks, managers of materials and processors of paperwork ...
>
> All this is stressful for teachers; we have to recognise the stress and do everything possible to alleviate that stress. It's not a sign of weakness to admit that you need help...
>
> (Assistant Head, School X)

> The first bit of advice I would give to a teacher who had never taught Standard Grade before, to help him/her cope with the investigation, would be to reorganise the classroom for resource-based learning; then the next thing to do is to make sure the appropriate resources are available.
>
> The third thing, but it's probably the most important, is to build up a good relationship with the pupils right from the beginning. You really do have to like the pupils that other people will label as the least-able; perhaps they really are not very bright — but you have to believe that they are capable of far more than they will deliver if you depress their achievement by your low expectations of them...

> Then, I say, look out of the window, admire the view and don't panic.
>
> (Principal teacher, School Y)

Why were investigations demanding? The teachers' perspectives

Part of the explanation for the high level of concern displayed by teachers about investigations lies in the awareness they have that pupils experience some difficulties. This is, however, by no means the sole or even the main reason for their concern. We have summarised their concerns under eight headings. These derive from our analysis of the interview data and are presented in order of priority, the most urgent and frequently mentioned first.

Teachers judged investigations to be demanding for reasons which fall within eight broad categories:

- Maintaining pupil progress.
- Distributing time effectively.
- Assessment.
- Managing varied activity.
- Resource management.
- Responding to pupil difficulties.
- Awareness of implications at school level.
- Unanswered theoretical questions.

Maintaining pupil progress

We mean by this getting pupils started reasonably expeditiously, ensuring that each phase of the investigation gets finished at an appropriate time and motivating pupils to work conscientiously and independently throughout the investigation. Each of these is frequently reported as a problem; the demands are 'end-loaded', ie the large majority of teachers said that the period from the end of February till the third week in March was 'horrendous'. (Paper work had to be submitted to the SEB by the end of March, but the timing of Easter required the process to be complete by 22 March.)

> I thought they were all started, because they seemed to have chosen their topics — but they didn't really get going till I realised their enquiry had to be much more clearly focused, ie framed as clear questions.
>
> Our investigation goes in four distinct phases (planning, collecting selecting, presenting); it was devilish difficult to ensure that all the pupils got each phase finished at the right time.
>
> Getting in their final reports was the single most difficult aspect: mid-February to mid-March was unspeakable ...
>
> My worst problem, without any doubt, was motivating everyone — but particularly the least able — to keep on going.

Distributing time effectively

It was seen in Chapter 2 that there was a very varied selection of ways in which teachers allocated the time available for investigations. What did not emerge in that chapter was teachers' widespread dissatisfaction with whatever pattern they had settled on; no-one felt that they had come up with the best solution; without exception teachers were planning to change the pattern next session. There are, of course, an infinite number of possibilities along a continuum between polar extremes. The extremes are not hypothetical positions; they were actually adopted by roughly equal numbers of teachers:

> Investigating is a vital part of the course; it has to be seen as related to and integral with all the other activities in the course. The main investigation has to be started as early as possible - well before the end of S3 — so that the topic is broadly settled before the summer holiday. They can then start in earnest at the beginning of S4. You then return to it regularly throughout the year; you keep putting in bits of guidance so their ideas gradually refine and improve. Then by the end of S4 they reach the highest possible standard...

> The investigation is important, but teachers have to realise how easily pupils get sick of a long-drawn out affair that seems to go on forever with no end in sight. Perhaps adults can cope with a long-term gradually maturing project — but kids can't. I start the main investigation just before Christmas in S4 and the whole thing is pretty concentrated — and finished completely by mid-February.

Dissatisfaction with the strategy adopted and uncertainty as to what distribution of time would be better is compounded by debate as to how investigations (or some components of them) should actually be introduced right from S1.

> Kids are good at projects at the end of primary school; there should be a gentle progression from projects to investigations right from the start of secondary school — they would then find Standard Grade much easier.

Teaching is difficult enough; serious uncertainty, about what one should be doing when, provokes considerable anxiety.

Assessment

Although overall this comes third in our list of causes for concern, there were some teachers for whom it was most decisively highest on the list. The teachers we interviewed seemed to fall into two fairly distinct groups: those for whom both the theoretical problems and procedural demands of assessment were an enormous and continuing headache and those who seemed to have solved

the problems (or repressed them) and refused to allow assessment to dominate other aspects of their teaching.

By way of illustration, we interviewed four teachers who **strongly** agreed with all of these statements:

> I felt a tension between my roles as teacher and assessor.
>
> I am unsure about the amount of guidance I should offer pupils.
>
> I need more guidance myself about assessing investigations
>
> I didn't have time to monitor pupil progress through the investigations.
>
> I am worried about the validity of my assessments.

On the other hand, three of our teachers disagreed or strongly disagreed with all the above statements saying things like:

> There is always a tension between teaching and assessing — what's new?
>
> I worry about the validity of other people's assessments — the moderators' for example — not my own.

Disagreement was also apparent over the procedural, administrative aspects of assessment. Some teachers were harshly critical of the demands made by SEB:

> They have no conception at all of the burden placed on ordinary teachers.

and of the:

> incredible volume of paperwork required — it takes hours and hours.And of course the payment of internal assessment is 'insulting and derisory'.

Others had an approach that was either impressively level-headed or engagingly cavalier:

> It looks bad, but once you thoroughly understand what's required, it's not nearly as bad as it seems.
>
> With a bit of experience, you have the confidence to take short-cuts; they have to spell it out in tedious detail — but as long as you get the gist and don't do things that are obviously stupid, it's amazing what you can get away with.

Managing varied activity

Investigating requires pupils to work more or less independently; the topics they investigate may be very varied. The setting-up and control of independent, resource-based learning involves a great deal of work from teachers (which pupils don't often recognise).

Sixteen of the eighteen teachers **strongly** agreed:

> It is very difficult to manage a large number of pupils doing different investigations.

What is a **large** number of pupils? A class taught by one of our teachers contained 32 pupils, another only 8 (but the corresponding class next session would contain 26). When asked if it was helpful strictly to limit the choice of topics investigated, teachers were equally divided; the view was that **some** limitation of choice was necessary in the interests of effective pupil management — but strict limitation would be quite against the spirit of investigations. It would certainly be easier to manage activities if groups of pupils worked on the same or closely related topics, but teachers were somewhat unconvinced this was educationally desirable; most teachers strongly disagreed with the suggestion that the whole class should work within the one topic area — however much easier this might make life for teachers.

The management of pupil activity outwith the school was frequently mentioned by teachers as a source of problems. If a pupil has to collect information by interviewing a sample of passers-by or observing traffic flow, within the school day, what level of supervision is required to guarantee pupil safety? The arranging of more extended fieldwork poses a whole series of issues and problems. For a mixed class of say 20 pupils to be out of school two teachers are required, one of each sex; where is the second one to come from? It is unlikely that much can be achieved within the period(s) allocated to the subject; how can a longer session be arranged without complaints from other teachers of disruption to their subjects? What exactly is the education authority's policy on insurance? How has transport to be paid for?

The problems of extended fieldwork are most acute in geography. Given the difficulties, it is remarkable that in four of our six schools some form of fieldwork was regularly, if not frequently, arranged — some of it residential. All geography teachers were certain that fieldwork was a desirable, indeed necessary, part of their subject and that fieldwork was a fertile source of topics for pupil investigation.

Resource management

Resource materials are necessary; it is from these that many pupils find the information they seek and all pupils find the knowledge necessary to place their particular investigations in context.

Teachers of all social subjects detailed the demands within this area. The range of issues is indicated by this set of quotations:

> Classrooms and store rooms here to be carefully organised; materials have not just to be there **somewhere** — they have to be catalogued and stored in ways that both the pupils and I can find what we want.
>
> We are lucky in that we have a superb librarian; I don't know what we'd do without her.
>
> A lot of stuff has come to us from outside bodies — like the Central Support Group. Much of it is excellent; some is really lousy. You have to do a careful selection job of what you're going to make available.
>
> Modern studies has a particular problem; we need continually renewed **contemporary** materials.
>
> History has a unique problem; many primary sources are unclear and illegible for pupils; they have to be 'doctored' but not distorted.
>
> We have a special problem in geography; people just don't realise that our normal learning resources — maps — are so **big**. This gives problems both in storage and in use...
>
> There isn't enough money to duplicate and photocopy all the stuff I'd like to make available in multiple copies...

None of the schools with which we worked was involved with SNAP — a project aiming to provide support for the Investigating element at Standard Grade, to all secondary schools, as part of National Education Resources Information Service (SNAP, 1991). Several were, however, using or planning to use computer data-bases of one kind or another. The availability of an adequate supply of computer hardware, readily accessible to pupils, was seen as likely to be a growing problem; helping pupils to use available data-bases did not seem demanding.

There was not usually a word-processor available in the individual subject departments; sometimes there was one for the three social subjects; sometimes one or two were available in the library or business studies departments. Increasingly, pupils wanted to use these, for example, for the construction of questionnaires and the writing of their draft and final reports. Some pupils in three of our schools had access to a word-processor at home; teachers worried that other pupils without such access were going to feel increasingly disadvantaged in the investigation.

Responding to pupil difficulties

We have dealt with this at some length above. Pupils don't report finding investigations particularly difficult; teachers do find it demanding to ensure:

a. that pupils overcome their difficulties with time and timing
b. the development of adequate skills in the analysis and evaluation of data
c. that pupils plan and organise the investigation effectively as a whole.

Awareness of implications at school level

It was the general view of the teachers we talked with that the investigation was a valuable part of their subject at Standard Grade:

> my subject would be significantly impoverished if the investigation were to be removed.

Two teachers exhorted us forcefully that we must **not** make any recommendation that because investigations were demanding they should be chopped.

At the same time there was general unease about the 'proliferation' of investigations (or similar exercises) across the curriculum as a whole. Teachers felt that the number of investigations that many pupils were now required to undertake raised quite serious problems for the school as a whole — and that these problems were not being actively tackled. The six main types of problem raised were as follows:

a. the **pressure** on pupils to meet submission deadlines in March meant an unacceptable degree of pressure on pupils and all departments (including these subjects which **didn't** have investigations — they complained that pupils were being withdrawn from their classes)
b. investigations are **expensive** — they should have an impact on subject funding policy
c. an investigative element converts any subject into a **practical** subject — therefore the maximum class size should be 20 pupils, not 30
d. investigating by pupils in a number of subjects makes new demands on **library and learning-support staff**
e. more and more investigations would begin to alienate parents and community resources to the possible detriment of the school's **external image**
f. increased fieldwork means **timetable alterations** to minimise disruption to other subjects.

Unanswered theoretical questions

It was very clear in the later stages of our interviews with teachers that they were concerned about difficult conceptual and theoretical issues raised by investigations. These concerns surfaced from Section E of the schedule (General Issues) and in response to the final question (What have we not talked about, that we should have done?). Teachers felt that nobody had given them clear answers to these questions — and they themselves had not had time throughout the year to work out any satisfying answers for themselves. This may appear somewhat esoteric and insubstantial; the reader may question whether such issues are important enough to include in a list of factors which make some aspect of teaching 'demanding'. Are there not always unanswerable theoretical questions? Is maturity in professionals not the ability to cope with uncertainty? Perhaps so.

Nevertheless, these researchers are in no doubt that many of the teachers interviewed found the practical conduct of investigations unsettling because there were significant underlying theoretical worries. Two general worries emerged.

a. *The relationship between teaching and assessment*

Teaching was seen as that process by which pupils were helped to maximise their achievement, but providing 'help' to pupils reduced the grade that can finally be awarded. Teachers were thus required to assess their priorities at different stages of the investigation; their dilemma tended to be resolved by subtle distinctions between 'guidance' and 'support' on the one hand and 'help', 'assistance' and 'spoon-feeding' on the other. All teachers were aware of this; some agonised over it. Teachers knew of the current orthodoxy that assessment integral to teaching is 'a good thing' but were faced with the practical task of achieving a desirable integration.

This finding of ours is very similar to that of Scott (1991):

> Evidence from our case-studies suggests that close integration of assessment task and learning programme was not being achieved. [Some teachers...] conscious of the need to assess in nationally equivalent environments were formalising the process and as a result disconnecting assessment from learning and thereby limiting its notional ability to act formatively.

b. *The extent to which skills and processes are subject-dependent*

It is no criticism of our teachers to claim that when they entered this area, they tied themselves in knots; most of the academic and research literature in the area does the same (see, for example, Holroyd, 1989, Chapters 4 and 5).

> The skills needed in investigating in history and geography are the same, in one way — extracting information and analysing the data are the same. On the other hand, they are really quite different; if the content on which you exercise the skill is different, then the skill is different.
>
> Investigation is a real and proper part of history, but not of some other subjects. It worries me that pupils end up doing the same things in every subject in the curriculum. They will get as sick of investigating as they are of worksheets. One pupil actually said to me, 'not another investigation — why don't we just get proper teaching?'
>
> Investigating is the very heart of geography — it's a necessary and a good thing. Investigations across the curriculum are a bad thing; the cumulative effect is going to be disastrous.

INVESTIGATIONS: RESPONSES TO THE DEMANDS

Administrative response: the senior management perspective

Four assistant heads and one depute were interviewed. These were all impressive people — clearly experienced and very able, they all appeared in command of the complexities of running large modern secondary schools. Although busy, they gave generously of their time, recognising the importance of the topic of our enquiry. The interviews were enjoyable and stimulating, but it has to be said there was an element of defensiveness on each occasion. The explanation seems to be that accepting the importance of the topic, being willing to give time to discussing it, they began to think of things that perhaps they should have done but had not thought of doing or had not found the time to do in the midst of the competing demands for their attention.

In three cases the first part of the schedule proved a little difficult to answer. It asked for issues concerning investigations which had been raised by each of the social subjects departments. In three cases, the senior management representative could describe issues — but not the department of origin. Issues tended to be seen as person-specific rather than subject-specific:

> Mrs Z was in and out of this room like a yo-yo; she kept button-holing me in the corridor — but then that's just her. The other members of the department are fine.

As Table 5.1 shows, issues about Standard Grade investigations had been raised with senior staff, especially that of encouraging pupils to meet deadlines for submitting their investigations. The failure to identify the particular department or departments raising issues may indicate a concern across the curriculum with the demands of investigations, since it is likely that concerted pressure from any one subject area would have been remembered.

Table 5.1: Aspects of investigations said by senior management to have been raised with them

Aspect	No of mentions	Source
The deadline problem (February-March)	4	General
Restrict class sizes	2	General
Extra money	2	General
Standard Grade in general, not investigations	2	General
Getting out of school	1	General
Staffing problem	1	Modern Studies
Learning support policy	1	Geography
General stress	2	History
Timetabling for inter-departmental meetings	1	General

It is interesting to contrast senior staff's perspectives about the issues raised with them, with the views of principal teachers. Table 5.2 shows that broadly speaking the same range of issues dominated: deadlines, class sizes, funding, timetabling. It also shows the PTs perceptions of senior staff's response. What is striking however, is the contrast in the frequency of mention of issues.

Table 5.2: Aspects teachers said they raised with senior management

Aspect	Number of mentions	Response
Geography teachers (N = 6*)		
Pupil failure to meet final deadlines	5	Helpful
Co-ordination of final deadlines	4	Looking at it
Fieldwork — cost, supervision, transport, insurance	4	Some advice. Approval of departmental plans
Overall burden on pupils	3	We'll look at it
Overall stress of Standard Grade	2	Just have to cope...
Keep class sizes down	2	Regional policies...
Difficulties of mixed-ability teaching	2	Deal with it departmentally...
Motivating the less-able	1	You can cope...
*One geography principal teacher said he had raised no issue with senior management: I have raised nothing — and they have never approached me. I interpret that as meaning they are confident about my abilities.		
History teachers (N = 6**)		
Pupil failure to meet final deadline	4	Helpful
Funding for investigations	3	No solution
Timetable implications of getting out of school	3	Little room for manoeuvre
Keep class sizes down	3	We have only a little scope
Extra computer hardware	3	Not much
School policy on learning support	3	Nothing yet...
Co-ordination of deadlines	2	Looking at it
Complaint about low quality of exemplar materials	1	Departmental
**One history principal teacher said he had raised nothing with senior management: They wouldn't be able to help; none of them has ever taught Standard Grade; regional and national policies give them no room for manoeuvre; they are not unsympathetic — just impotent.		
Modern Studies teachers (N = 5)***		
Pupil failure to meet final deadline	4	Helpful...
Burden on pupils in February/March	3	We'll look at it...
Fieldwork — cost, supervision, insurance, length of time	3	We'll check your arrangements...
Storage of resource materials	3	Sympathetic
Additional word-processors	2	Not yet
Staffing problem	1	Next session
***One teacher said: Why raise anything with that lot; the response is always the same — you just have to cope.		

Seventeen principal teachers identified 61 issues they had raised with senior management; senior management in five schools identified 16 issues that they said had been raised with them (although 11 of these might have been raised by all three departments). It may be unfair to leap to a firm conclusion from this; but we certainly had the definite impression that teachers felt they had raised more issues, more frequently, with senior management than members of senior management readily recalled. It is of course the case that principal teachers are mainly concerned with the problems of only one subject whereas senior management have to put the demands of a great many subjects into the context of school, regional and national constraints and policies. There are also different interpretations possible of what it means 'to raise an issue'. It seems likely that principal teachers feel they have raised an issue when they have described it in an informal interchange in corridors or staffrooms; senior management may mean that it has appeared in a written memo or on the agenda of a meeting. All the senior management representatives said that perhaps the most useful thing they could do was 'to act as sympathetic listeners'. There had undoubtedly been some occasions when principal teachers believed they had drawn attention to a problem they hoped senior management would help them to solve, but senior management thought that having provided a sympathetic ear they could move on to some other demand on their time.

The last page of the interview schedule contained a list of possible actions by senior management. It was the original intention to ask for each whether it had been tried and if so, whether it was effective; this was adapted on the spot in the first interview to whether each was thought an appropriate action for senior management and, if so, whether such action had been taken. This cut down the number of negative responses our interviewees had to make.

Table 5.3: Possible actions (with regard to investigations) by senior management (N = 5)

Action	Number seeing it as appropriate	Number who had taken such action
Being a sympathetic listener	5	5
Suggesting changes in teaching method	2	2
Suggesting changes in resource management	3	0
Facilitating fieldwork arrangements	3	3
Suggesting how time should be distributed	2	0
Recommending investigating in S1/S2	2	2
Encouraging inter-departmental co-operation	5	1
Exploring core plus options model	1	1
Making additional money available	5	1
Consider timetable alterations	1	0
Provide different/additional accommodation	3	2
Develop school library policy	3	1
Develop learning support provision	4	2
Restrict class size	3	3
Facilitate co-operation from community	5	1
Make representations to outside body(ies)	4	0
Refer problem to headteacher	1	0
Pressure on pupils to meet final deadlines	5	5

These bald figures do not reveal the wealth of background explanatory comment that was provided. Only two assistant heads felt it would be appropriate to make any suggestions about appropriate teaching methods: one of these himself taught in a social subject department and would only make suggestions within that one department; the other felt such action would only be appropriate if a school inspection had pin-pointed some deficiency in methods. This can be seen as a welcome respect for the professional autonomy and expertise of subject specialists. On the other hand it does seem odd that two respondents did not think it appropriate to develop school library policy and one did not think it appropriate to develop school learning support policy and provision:

> those are matters we leave up to individual departments and principal teachers.

In several areas senior management would like to have been helpful but had little scope — for example in finding additional money. It is encouraging that in some schools it had been possible, within the normal staffing constraints, to restrict class sizes in the first two years of operation of the course (3 schools) and to find alternative or additional teaching and storage space.

Note that all interviewees had acted as sympathetic listeners and all had provided assistance to departments by putting extra pressure on some pupils to meet the deadline for submission of the final report.

Research does not always receive information; on occasion it acts as a spur to thought and action. In response to several items, several of our senior management interviewees said:

> That sounds like a good idea — I hadn't seen that as part of my role. I'll think about it for the future...

This reaction is somewhat surprising given that senior promoted staff have been given advice on the management and implementation of investigations in Standard Grade courses (SCCC, 1990).

The variety of responses

One of the original research questions concerned the effectiveness of departmental and school responses to the perceived demands of investigations. Investigations were seen as demanding; there was a great variety of types of response from individual teachers, from departments and from senior management. The description of that variety is rather difficult if this report is to be kept within a reasonable length; an evaluation of effectiveness is highly problematic within a brief, exploratory study. We can report some views of respondents on what they thought was relatively effective — but there simply was not time to collect sufficient evidence to give sound, defensible conclusions on effectiveness, nor was there time available to check the validity of our conclusions with our respondents.

It was our original intention to attempt to distinguish between administrative and educational responses. There is a crude sense in which we can say that the class teacher's response was essentially educational; the department's response was mainly administrative with some educational elements; senior management was predominantly administrative. But this is to say nothing useful. The nature of the investigation is such that the teacher's role is to manage the context, the resources and the support for pupils to carry out an extended task in a relatively independent way; the place for traditional exposition and interaction with a class group is minimal. The management and the administration, however, have clearly to depend on educational knowledge and expertise: the production of appropriate pupil resource materials begins as an educational response — and ends up (in duplication, storage, access etc) as an administrative one; the handling of assessment in an effective manner starts from educational considerations — but ends with record-keeping and the timeous following of the required SEB procedures. In considering responses to the demands of investigations, an administrative/educational dichotomy did not emerge from the data.

Table 5.4 lists the main demands of investigations identified by teachers, discussed in Chapter 4. The columns (numbered 1-4) summarise the responses to these demands by individual teachers, by departments, by inter-departmental action and by senior management. These responses are then discussed in more detail after the table.

Table 5.4: Summary: nature and origin of responses to demands

Demands of investigations	Individual teacher (1)	Subject department (2)	Inter-departmental (3)	Senior management (4)
Maintaining pupil progress — motivation	Individual expertise	Mutual commiseration	Mutual commiseration	—
— interim deadlines	Regular monitoring	Some preparation of progress schedules	Informal conversation	—
—'final deadline	Working intervals and lunchtimes	Principal teacher chasing-up	Mutual commiseration Preliminary discussion of staggered deadlines	Additional pressure on pupils Consideration of staggered deadlines
Pattern of time distribution	Some experimentation	Experimentation–evolving policy	Informal conversation	—
Assessment	Repeated study of offocial documents Regular agonising	Departmental guidelines Confidence through interaction	Informal conversation	Some advice (encouragement from SEB liaison member
Managing varied activity — classroom	Individual expertise	Support of colleagues	Informal conversation	—
— outwith school	—	Development of departmental policy	Discussion to harmonise	Scrutiny of arrangements
Resource management — learning materials	Individual efforts	Preparation; storage; packs; guides	—	—
— information technology	—	Request for additional hardware	Sharing hardware	Seeking money, eg TVEI
Responding to pupil difficulties	Professional skills	Departmental guidelines	—	[The 'deadline' problem]

Demands of investigations	Individual teacher	Subject department	Inter-departmental	Senior management
Implications at school level — cumulative pressure on pupils	Sympathy	Unease	Mutual concern	Increasing concern – survey in one school
— expense	Making ends meet	Requests for aditional funding	Mutual grievance	'Little scope for action'
— class size	Coping	Requests for reduction	Mutual concern	Some restriction in first year of course
— library and learning support	Little action	Some requests and 'local' agreements	Informal talk	Surprisingly little action
— external relations	Some unease	Established contacts – continuing diplomacy	—	Would help if it became necessary
— timetable changes	Coping with existing provision	Some requests for longer times for fieldwork etc	Plan to minimise disruption	'No requests received'
Unanswered questions (5) — teaching and assessment	Unease or agonising	Support of colleagues	Mutual concern	—
— relationship of skills to content	Underlying uncertainty	Rather superficial discussion	Informal discussion	—

Table 5.4 (cont)

Let us now look at the responses in more detail.

① Individual teachers found effective responses and coping strategies. The usual coping strategy was:

> This is bad, but I shall cope; it is bad because it is unfamiliar; I'll get through this year — next session must be better; I'll work intervals and lunchtimes in February and March; I shall let off steam every now and again to friends and colleagues...

Those teachers who claimed to be responding effectively were those who:

a. thoroughly understood national, regional and departmental documentation
b. understood and accepted the 'philosophy' of their Standard Grade course in general and the investigation in particular
c. had found an appropriate way of compiling, storing and accessing pupil resource materials
d. had used some strategy to limit pupil choice of topics so that appropriate resources could be found
e. were involved in some lively, supportive network of teachers of their subject outwith the school
f. **liked** less-able pupils.

② Those departments which had responded most effectively to the demands of investigations had principal teachers who had concentrated on three activities.

Production of written guidelines

This seemed to us the single most important factor distinguishing the most successful departments from others. Guidelines took a variety of forms, but fell into three main types:

a. a clear framework for pupils; this is what an investigation is; you have to do these things...; you should have done this and this by these dates...
b. a detailed schedule for teachers: distribute your time as follows; by these dates these things should have been done...
c. an index/catalogue/guide to available resources.

Appendix IV gives a few examples of Guidelines.

Provision of resource materials

When most effective this was a combination of selected materials from external sources, with school produced/collected materials and personal materials from previous teaching. It was

important not just that these existed, but the teacher knew where they were (in classroom, store, library or whatever) and had planned how pupils could get ready access.

Establishment of supportive climate

We found it surprising that some subject departments still exist where the emphasis is on the individual teacher as a single, independent operator. The majority, however, were functioning as teams where resources and expertise were shared; perhaps more importantly they were **friends** who provided sympathy and support when the going got rough.

In two instances, the 'department' was in fact only one person. Both of these people appeared to be doing well — but they had little means of knowing whether they were or not. The word 'isolation' was frequently used by these people; they clearly needed **someone** — even if only a visiting researcher — to provide them with reassurance and some kind of positive reinforcement. One of these people was helpfully involved in a network of principal teachers, in-service courses, his subject association and the authority adviser; the other appeared genuinely isolated. It is to be regretted that senior management seemed not to have recognised this as an area for supportive action.

We expected to be able to identify a fourth area of effective response: successful exertion of influence on senior management. Over perhaps two matters there was evidence of this in some schools; the two matters were — the provision of authoritative pressure on pupils to meet the final deadline and some restriction of numbers and/or spread of ability for the first years of Standard Grade implementation. Apart from this, the usual stance was 'there are subject problems — we have to solve them at a departmental level'.

(3) With one obvious exception, relationships between the social subjects departments were amicable and cordial. In another school, the timetable allowed the three departments to come together for an inter-departmental meeting if the departments so chose; they did not make much use of this opportunity.

Subject principal teachers had a general awareness of the requirements of the Standard Grade courses in other social subjects; this had apparently been gained from some reading, but more often from informal conversations during chance meetings. Most liaison appeared to occur over arrangements for fieldwork and for pupils getting out of school. Social subjects showed the greatest unanimity of views when asked if it was a good idea for pupils to be able to do more than one social subject; they all felt it **was** — not for any clearly articulated educational reason or on grounds of career value for pupils — principally because it would give parity of esteem in pupils' eyes with the science subjects.

Our interviewees talked regularly of informal conversation, mutual concern and mutual commiseration. To some extent, it is helpful to know that other people are struggling with similar problems; it makes it clear that the problems are not due to one's own inadequacies.

We believe it would be even more helpful if social subjects departments came together to look for ways forward, to define common interests, to learn of useful strategies from each other and perhaps even to unite to form a more powerful pressure group.

Perhaps the fact that this has not happened to any significant extent is yet another indication of the pressures on teachers' time. There has been professional activity and staff development time: why have the teachers of the social subjects not chosen to spend some of this on inter-departmental collaboration?

(4) We have already considered the senior management perspective at the beginning of the chapter.

To repeat — we found little evidence (except on one or two matters and in isolated instances) of departments clearly presenting senior management with a problem and saying 'help us find a solution'. Similarly, there was only one clear example of senior management becoming aware through informal conversation of an issue and then deciding on a school-wide initiative to decide the extent of the problem. (This was a school survey: *The cumulative demands on pupils of Standard Grade continuous assessment.* Results are not yet available.)

Senior management showed their faith in the talents and abilities of their social subjects teachers by leaving them, on the whole, to work out their own salvation. This may in general be admirable — but there were definite areas where it seems clear that moves towards a whole school policy were required (library provision, learning support; availability of computer hardware; field and out-of-school work by pupils; S1/S2 changes in response to Standard Grade).

One assistant headteacher had come up with an interesting response; she had provided courses for staff in stress management and time management.

(5) Teachers showed unease about the non-availability of clear answers to underlying theoretical questions. The issues were niggling away beneath the surface and had not been addressed head-on within departments, amongst departments, with senior management — or externally. The lack of a good theory showed in the absence of effective practical responses.

Are skills content-free? Are there generalisable, transferable skills that emerge from and can be used outwith separate knowledge bases? Confusion in these areas meant there was no coherent view as to whether some form of 'core plus options' approach to investigations was conceptually respectable: the usual response to such a suggestion was that it was difficult to see how such an approach could be timetabled. Teachers seem pretty convinced that an investigation is wholly appropriate **within** their subject (and less appropriate in many others); therefore, their subject would be diminished without an investigation: 'But there are now too many investigations; there **must** be unhelpful

overlap...'. The possibility of an additional element in the S3/S4 timetable — 'The Investigation' — rather than, as now, the somewhat haphazard permeation of investigative skills across the whole curriculum — was a radical solution that people would need a lot more time to think about before being willing to express a view.

The sharp-eyed reader will have noticed that there is one section of the interview schedule which is not referred to in Table 5.4, but has been alluded to in the above comments.

Teachers were asked if they had raised any aspect of investigations in any local or national forum outwith the school. Frequently they had, but this question revealed the widely differing extent to which teachers had external contacts. For example, one teacher who was a member of the SEB panel for his subject, contributed regularly a workshop on investigations to in-service courses, had written exemplar materials for CSG, was an active member of his subject association and somehow found the time to 'network' energetically with fellow principal teachers all over Scotland; he was clearly a confident and very able young man. One does wonder what is cause and what is effect. Was he chosen to serve his subject locally and nationally because of his ability; did all this interaction with fellow teachers extend his competence and confidence? Probably both.... On the other hand, one teacher seemed to have no support, except the deluge of printed material he was unsure if he was interpreting correctly; this teacher was very highly critical of his education authority for, as he saw it, cutting the necessary support of his subject adviser.

The 'demands of investigations' were said regularly to form the subject of principal teachers' meetings and to be addressed in in-service courses: 'these are all helpful — but you still have to get back to the chalkface and devise and implement your own systems'.

Advice from principal teachers

We can get an additional insight into how individual teachers can effectively respond to the demands of investigations by a consideration of how experienced principal teachers said they would advise teachers approaching investigations in Standard Grade for the first time. Principal teachers were asked for their three strongest bits of advice on investigations — but some gave four.

Geography (Number of mentions in square brackets)

1	Prepare well beforehand — read and re-read the departmental guidelines — then follow them	[4]
2	Keep well aware of policy developments and departmental practice — keep talking with me and your colleagues	[4]
3	Approach the mini-investigations very seriously and learn from them	[3]
4	Don't panic; panic is likely — but neither necessary or justifiable	[2]

5 Be methodical about assessment — but approach the requirements with a degree of cynicism [2]

6 Limit the choice of topics so that appropriate learning resources are available (NB No departmental guidelines) [2]

7 Get pupils to decide topics quickly — then move. (Topics don't have to fit key ideas; if it seems to **you** to be good geography then the key ideas are there somewhere. Be confident in your own judgement) [2] [1]

8 Concentrate the main investigation into a limited time (NB No departmental guidelines) [1]

9 Browse through previous investigation reports [1]

10 Keep talking to pupils — and **listen** to them [1]

History

1 Get very familiar with the course structure [5]
(— and the departmentally available guidelines) [3]

2 Make certain that pupils meet all the deadlines [4]

3 Seek my advice on which supporting 'bumf' is valuable and what is useless [3]

4 Keep very systematic records for formative assessment — but don't reach any firm conclusions right till the end [3]

5 Accept that investigation will be all-consuming in your first year — donate every 'free' period to it — it will be easier the following year [2]

6 Restrict choice within bounds — of your confidence and the available resources [2]

7 Get your classroom and store organised for resource-based learning

8 Assessment needs all your mental agility — but have the confidence to take short-cuts [1]

9 Make sure the resources you supply are appropriate to ability level — both in scope and in language [1]

10 Think about P7 pupils before you panic [1]

Modern studies

1 Understand all the documentation of the course very early on [4]
(— within which — understand and follow departmental guidelines) [2]
(— the only document which matters is SEB 'Assessment of Investigation' [1]

2 Ensure pupils know exactly what has to be done, by what date [3]
(— within which — ensure pupils fill in the printed 'progress plan') [1]

3 Insist that the pupils' aims/questions are limited, precise and manageable [3]

4 Be sure the topic does count as Modern Studies [2]

5 Worry about assessment — but don't worry too much; consult me on acceptable short-cuts [2]

6 Grab all the help you can for lower-ability pupils from learning support staff [1]

Three comments only on the above:

a. Grasping the requirements is easier for new teachers when the department has already prepared departmental guidelines.

b. It seems that assessment requirements appear much more formidable than they actually are.

c. Investigations are panic-provoking — but the panic will subside with support and experience.

MAIN FINDINGS AND RECOMMENDATIONS

Main findings

1 The total time given to Standard Grade courses over S3 and S4 varied considerably, but was always above the SCCC recommended minimum.

2 The time given to investigating was difficult to estimate; it was almost certainly less than one-third of the total time.

3 No one pattern for the distribution of investigating time has emerged as the most favoured.

4 Most departments have begun to adapt their courses in S1 and S2 to prepare pupils for investigating in S3 and S4.

5 The majority of pupils found the investigation both enjoyable and valuable; they did not find investigations difficult overall. Pupils were aware that they did things in various subjects that got called 'investigations'; they tended **not** to see these as being very similar.

6 The biggest difficulties for some pupils were finding the time to do everything (particularly in February and March of S4) and organising/planning the investigation as a whole.

7 All teachers felt that investigations were valuable; they also said that the level of concern investigations had caused them in 1990-1991 was high or very high. The level will increase with greater numbers of pupils or a wider ability spread within classes and then decrease through the greater experience and confidence of teachers.

8 Pupil difficulties put some heavy demands on teachers: coping with the timing problems experienced by pupils and helping them with the analysis and evaluation of their data were most often mentioned.

9 Teachers think investigations are demanding for reasons which fall within eight broad categories:

a. maintaining pupil progress
b. distributing their own time effectively
c. assessment
d. managing varied activity
e resource management

f responding to pupil difficulties
g. school level implications
h. unanswered theoretical questions

10 Investigations were seen by teachers to have whole-school policy implications.
a. The number of investigations across the curriculum puts pressure on pupils.
b. Investigations are expensive.
c. Investigating makes each subject practical — with class size implications.
d. Investigations can be helped considerably by library and learning support staff.
e. Investigations by a large number of pupils can put demands on parents and community resources.
f. They suggest the need for timetable modifications.

11 Teachers were uneasy about how best to integrate assessment with teaching and about the extent to which the skills of investigation are subject-dependent or generalisable. Teachers were convinced that an investigation within their own subject was a good thing; they were worried about the 'proliferation of investigations across the curriculum'. A lack of clarity on theoretical issues, and the practical demands of implementing a new course, have inhibited consideration of alternative strategies for developing investigative skills.

12 Classroom teachers coped with the demands of investigations; stress reached a level in February and March which in some cases was severe. Effective responses depended on a thorough grasp of relevant documentation, acceptance of the philosophy of independent study, careful organisation of pupil learning materials, some limit to pupil choice, contact with teachers of the same subject outwith the school and a liking for less-able pupils.

13 Those departments which had responded most effectively had produced clear, brief written guidelines for both pupils and teachers, had developed an effective strategy for storing and accessing resource materials and had established a supportive climate within the department.

14 Relationships between social subjects departments were cordial. There was little evidence of members of departments meeting together to learn from each other or to plan concerted action.

15 Principal teachers claim to have raised more issues concerning investigations with senior management than senior management recall having been raised. The single most troublesome issue was 'the deadline problem'; management had been helpful in putting additional pressure on pupils and in chasing-up those who seemed likely to fail to submit final reports on time.

16 An informal interchange was often seen by principal teachers as 'raising an issue'; senior management tended to concentrate on issues that had either occurred regularly or had been the subject of business at a more formal meeting.

17 Members of senior management all claimed to have been sympathetic listeners. There were issues where senior management had tried to respond positively, but were seriously constrained by regional or national policies (eg on staffing). There were a few issues where action was seen as appropriate and feasible, but had not been taken: these included school library and learning support policies and computer hardware availability.

18 Senior management spoke highly of the ability of subject teachers 'to get on with the job': they rarely mentioned any need to let them know that their efforts were appreciated and valued.

19 Experienced teachers had plenty of advice for teachers new to investigations. Such advice centred on thorough preparation, organisation of pupil materials, careful following of departmental guidelines, 'cutting some corners' in assessment procedures and avoiding panic through the support of colleagues.

20 Teachers have received a great deal of written guidance from national sources; it is possible they have received too much. There was evidence that it had not always been thoroughly digested.

Recommendations

It would be very easy to construct an exceedingly lengthy set of recommendations; each of the above conclusions suggests a set of actions that it would probably be helpful for somebody, somewhere to take. Much of that action will occur anyway as teachers, senior management, HM Inspectorate, local authority advisors and others go about fulfilling their daily professional obligations and responding to emergent pressures. We shall therefore confine ourselves to a few outline recommendations to five destinations.

Departments

a. All principal teachers who have not already done so should devise summary guidelines on investigations, both for pupils and teachers, on what exactly has to be done and by what deadline.

b. The social subject departments within each school should meet regularly to learn from each other and to consider joint action.

c. Principal teachers should ensure that members of senior management become actively involved in finding effective responses to the demands of investigations.

Senior management

a. Appropriate members of senior management teams, recognising the whole-school implications of Investigating, should be pro-active as well as responsive. Standard Grade implementation should increasingly feature in school development plans.

b. Senior management should clearly recognise the staff development needs revealed by Investigating. (These may be in previously unsuspected areas like Stress Management and Time Management.)

Scottish Examination Board/Scottish Consultative Council on the Curriculum

Consideration should be given to the production of **one** booklet for each social subject giving definitive, summary advice on the teaching and assessment of investigations. (Such a booklet should, if possible, consolidate and supersede all the written material already distributed.)

Scottish Consultative Council on the Curriculum

A working party should be established to decide whether the development of investigative, problem-solving and thinking skills should permeate the secondary curriculum or be the subject of a separate programme within the curriculum — and to make appropriate recommendations.

Scottish Office Education Department

A major national research project should be funded to assess the cumulative demands of investigations and other similar activities, across the secondary curriculum, on both pupils and teachers.

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