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**Teaching Practice in Risk Education for 5-16
year olds.**

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CONTENTS

1	Introduction	6
1.1	Risk Education Programmes	6
2	Aims and Objectives	9
3	Research Design.....	10
3.1	Interviews with Teaching Staff	10
4	Teachers and the Management of Risk Education	14
4.1	Lesson Planning & Guidance	14
4.2	Risk Education Styles & Methods	20
5	Risk Education and Variations Between Subjects, Schools and Key Stages	29
5.1	Variations between Schools & Teachers.....	29
5.2	Variations between Subject Areas.....	29
5.3	Variations between Age Groups.....	32
6	Barriers to Risk Education	34
6.1	School Infrastructure and Funding	34
6.2	The Demands of the National Curriculum	34
6.3	The Restrictions Placed on Learning Opportunities Through Regulations and Safety Concerns.....	34
6.4	Specific Issues for PSE	34
6.5	Levels of Technical Knowledge.....	35
6.6	Pupil Behaviour & Attitudes	35
7	Discussion	37
7.1	Lesson Planning	37
7.2	Teacher's Approach To Risk Education	38
7.3	Additional Issues in Risk Education	42
7.4	Future Risk Education Interventions.....	43
8	Main Findings	45
9	Recommendations	47
10	Appendices	48
10.1	Appendix 1: Interview Guide.....	48
10.2	Appendix 2: The English National Curriculum General Teaching Requirement for Health & Safety.....	49
10.3	Appendix 3: Risk Education Resources Referred to During Teacher Interviews	49
11	References	51

EXECUTIVE SUMMARY

OBJECTIVE

To provide an initial insight into issues surrounding the delivery of risk education in State schools in England, Scotland and Wales.

This objective was addressed by undertaking a series of comparative case studies¹ involving a sample of seven schools (2 primary (5 – 11 yrs) and 5 secondary (11 – 16yrs)), with a view to establishing a detailed contextualised insight into:

- how schools have interpreted their obligation to address risk issues;
- the nature and extent of risk education at a range of key stages;
- levels of awareness amongst teaching staff regarding the requirement to teach risk concepts;
- teaching staff understandings of risk concepts;
- the needs of teaching staff regarding guidance on delivery of risk concepts;
- the quality of guidance on teaching risk concepts - including sources;
- the nature and extent of training needs for teaching staff in delivering tuition on risk concepts.
- perceived barriers to teaching risk concepts;

MAIN FINDINGS

- At the strategic level within school curriculum planning is associated with termly plans and weekly schemes of work. These are, in most cases, based upon the National Curricular requirements (in England and Wales and equivalent statutory arrangements in Scotland). Here there exists notable scope for interpretation and autonomy, hence, the realisation of National Curriculum objectives can be achieved by means of a variety of classroom activities and associated learning outcomes.
- Although teaching staff routinely draw on National Curriculum guidance materials it would appear that levels of awareness and understanding of the need to teach young people about risk assessment and control issues is low and in many instances effectively absent. Only one (non-PSE) respondent reported that they had introduced topic-based work where education in risk concepts constituted a primary focus.
- In the main teaching staff associate the need to address risk issues with the need to comply with health and safety Regulations. Indeed, approaches to risk education appear to be very much based upon the implementation of functionally sufficient methods for achieving adequate risk control within a lesson, e.g. use of PPE. The risk education content of a lesson is, in summary, primarily focused on what is *immediately* necessary to conduct the lesson in a safe and appropriate manner.
- In common with the wider population, the concepts of health and safety tend to be much more clearly understood by teaching staff than the more ephemeral concepts of hazard and risk. Classroom teachers' discourse tends to reflect the established concepts of 'safety

¹ By definition case studies are indicative rather than, necessarily, representative. This report and its findings may not, therefore, apply to all cases. However, throughout our necessarily small sample the findings were reasonably consistent.

education' and 'health education', and they were more likely to talk of 'safety in the classroom'.

- There was little evidence that schools or their departments have formal objectives for the delivering curriculum requirements which address risk education. Rather, the fulfilment of this requirement is devolved to classroom teaching staff. In the majority of instances, it seems that where such issues are addressed this tends to be on an ad hoc basis, referenced to hazards associated with lesson content, rather than reflecting a strategic approach to the delivery of risk concepts, per se.
- It is apparent that where teaching staff address risk issues this tends to take the form of:
 - 1) A formal introductory or preparatory risk education sessions employing, for example, videos, 'spot the hazard' sheets and classroom demonstrations to convey risk messages; (principally for Art; D&T and Science subjects).
 - 2) Skills based education, typically taking the form of practical tasks / demonstrations linked with group discussions, or role playing exercises.
- In contrast to these formal methods, it was claimed that the vast majority of what might be construed as risk education is conducted informally, on an ad hoc basis as and when it is required, during the course of a lesson. The methods cited here were wide ranging, but, it seems, frequently involve the reinforcement of earlier instruction. In this respect, the implicit claim is that risk education, for the most part, constitutes an embedded aspect of the curriculum, rather than constituting a specific or formally planned component.
- Teaching staff generally cited 'common sense' as the basis of their approaches to risk education.
- The majority of teaching staff indicated that they could not envisage teaching risk education topics or issues for more than a few consecutive minutes in any lesson.
- The approach to risk education adopted by the majority of teaching staff appears to be in notable contrast to the approaches advocated within a number of core education guidance documents (e.g. DfES 2001 – *Safety Education: guidance for schools*), i.e. rather than approaching risk issues through formalised methods aimed at imparting understanding about risk control with an emphasis upon transferable life skills, the approach adopted in most instances appears to be strategically lacking.
- Findings highlight the presence of notable differences between teachers, both with regard to their attitudes and approaches to risk education. These differences appeared to be related to their subject specialism, e.g. IT teachers appeared less inclined to recognise the hazards in their subject area, compared with other disciplines. By contrast, PSE and 'Home economics' teaching staff were more likely than members of other disciplines to introduce topics that included health, safety or welfare as a principal focus.

RECOMMENDATIONS

- There is a need for a co-ordinated policy on the coverage of risk education issues. To be effective this policy should be established within individual education establishments by senior staff, e.g. the head teacher or head of discipline. This should be backed upon by clear guidelines on provision from an external source, e.g. the LEA, possibly supported through

INSET training and co-ordinated across relevant subjects. This approach would place the emphasis on a school centred approach to risk education.

- Teaching staff would benefit from clearer instruction on how to deliver risk concepts in education. The provision of teaching packages and schemes of work would help facilitate this, but would not in themselves overcome the problem of the lack of clarity over what is meant by risk concepts and risk management.
- Teachers should be encouraged to recognise the value of their existing (formal and informal) approaches to risk communication, and steps should be taken to build upon these skills in the provision of future advice, guidance and training in risk education.
- Where possible, guidance and training in risk concepts should aim to avoid the use of abstract risk concepts, or codes of conduct, as there is no reason to assume that they will be understood and communicated with any useful practical effects. Idealised or generic concepts often create tensions, and promote confusion, rather than clarity, unless they are firmly linked with specific risk taking activities. However, teachers should be encouraged to adopt appropriate methods for addressing risk education; these include learning through case studies, vignettes and practical activities. The most appropriate method is likely to depend on the curriculum subject and the topics that are being addressed.
- It is considered that a potentially effective way of advancing the implementation of risk education components would be through the provision of a range of well-designed teaching modules that fit into existing schemes of work, for each key stage. Rather than provide documents that include abstract discussions about best practice in risk communication, guidance should be based on clearly defined tasks and activities relevant to the subject area. Information should also be provided about curriculum objectives, learning points, and teaching methods. The main focus would be tasks for teachers and pupils to undertake.
- Given that many teaching staff appear confident that they are managing the deliver of risk concepts effectively, there is a need to bring the apparent shortfalls to their attention. In part this misplaced-confidence transparently reflects to the presence of ambiguity over the distinction between responsibilities for risk management and risk education.

1 INTRODUCTION

This document reports on the Health and Safety Laboratory's (HSL) study of teachers' approaches to teaching risk, health, safety and welfare issues for school pupils aged 5-16 years.

This work is designed to support the Health and Safety Commission's (HSC) *Revitalising Health and Safety* strategy for 'better education in risk concepts'. Action point 33 of this strategy document outlines the scope for improvement in the coverage of 'risk education'² for the National Curricula of England, Wales, and functionally equivalent arrangements in Scotland. An HSC progress report (HSC/02/10) provides further evidence of the ambitions to integrate health and safety education into the school curriculum.

The HSC/E's current interest in risk education for primary, secondary and tertiary students is summarised in the following statement: 'The process of acquiring risk skills must start before entry to the workplace when the main influences on people come from school, home and the community. If basic risk concepts are learnt at this stage, society at large may be able to realise the benefits of a more risk aware population' (HSE 2002).

Following a series of interviews with a sample of teaching staff from seven schools, this study provides insight into the way that teachers engage in the task of providing risk, health and safety education for pupils. The National Curricula state that risk education issues should be addressed in the delivery of the following subject areas. 'Art', 'Information Technology', 'Personal and Social Education', 'Physical Education', 'Science' or 'Technology' (or their regional equivalents). Teaching staff interviewed were therefore selected from those with responsibility for the delivery of these subjects.

This report is complimented by an earlier study of risk education requirements within the National Curricula for England, Scotland and Wales (see Shearn & Weyman 2003a). Building on the findings of this study, the current research sought to establish the relationship between education objectives and their practical realisation, in the delivery of risk education. For example, we consider what teachers prioritise in their lessons; what influences there are upon the shape and content of lessons; and, what obstacles might prevent them from developing approaches to risk education. The study focuses upon the ways that teachers interpret and practically implement curricular requirements for teaching risk issues.

1.1 RISK EDUCATION PROGRAMMES

There are three basic objectives associated with risk education programmes:

- (a) Awareness raising - strategies designed to disseminate knowledge and understanding of sources of harm;
- (b) Transferable skills - progressive approaches that aim to develop transferable life skills (relating to the risk assessment and control); and,
- (c) Behaviour modification - approaches that aim to reduce risk taking behaviour.

In many instances, in real world settings, these objectives tend to overlap and such that the essentially artificial distinction between them becomes blurred and diffuse. Almost all risk education programmes will incorporate these objectives at some level and in some combination. On the whole, programmes aim to bridge the gap between knowledge, per se, and attitudinal

² Throughout this document 'risk education' should be read as teaching and learning activities wherein risk, health, safety and welfare are being addressed.

and behavioural transformation, the overarching aim being to engender a culture wherein individuals can recognise hazards, assess the consequent risks and make informed decisions to avoid harmful consequences.

Government risk management strategies include enforcement, engineering solutions, and education programmes. This report is specifically focused on risk education aspects, although there is often overlap with broader strategies. Risk education programmes directed at individual behavioural change are relatively inexpensive to implement and have been said to possess the potential for significant impact where they are incorporated within concurrent school education programmes. There are, however, many uncertainties surrounding the actual impact of risk education programmes, not least because it is extremely difficult to evaluate outcomes for which the antecedents are multiple and complex (Warden et al 1997, Towner 1995). Whatever the objective of risk education programmes, instigators will typically be faced with unbalanced outcomes across target groups (Dryfoos 1990). Variable outcomes can relate to demographic factors (e.g. age, sex and ethnicity), personal traits (e.g. self-esteem, expectations, peer influence, education attainment) and family and community composition (e.g. income, role models, neighbourhood quality; and cultural norms).

This study is conducted against a background of increased interest in the value of risk education programmes that are implemented through State schools. The motivation for school based initiatives was predicated based upon the following rationale (see e.g. *Health of the Nation* 1992):

- children have had limited opportunity to gain practical knowledge and are therefore relatively less equipped to make informed decisions about risk management;
- children are perceived as vulnerable innocents;
- children have been accorded a right to knowledge about health and risks (United Nations 1989);
- education related knowledge gains are associated with the reduction in incidence of injury and ill-health;
- learning about risk management at an early age reduces the formation of bad habits and a predilection towards risk-taking; and,
- schools are well equipped to educate and are a convenient way of reaching children.

There have been a number of influential precursors to recent risk education programmes. For example, the Education Reform Act (1988) stated that the curriculum should be broad based, ensuring that pupils are provided with an education that promotes spiritual, moral, cultural, mental and physical development. The Act has led to a reappraisal of children's education, prompting greater consideration of the skills and values that are of importance for everyday life and work. Cross-curricula themes, such as communication, judgement and enquiry skills now feature as prominent curricular objectives.

Another influence on recent risk education programmes was the development of the European Network of Health Promoting Schools in the 1980s (WHO/UNESCO/UNICEF 1992). Although associated education programmes were primarily focused on 'health promotion in schools', other themes have become associated, including: the promotion of a safe school environment that encourages health and safety awareness amongst pupils and staff; placing the onus on pupils to take responsibility for their actions; and the promotion of a 'whole school' approach (actions that emphasise the inclusion of teachers, pupils, parents/carers and the wider community in decision-making) to health education (see HEA 1997). These themes have been reflected within many subsequent or derivative initiatives. For example, the National Healthy Schools Standard (see DfEE 1999) is an accreditation scheme that aims to provide support to schools in becoming healthier places: 'This support might include guidance on leadership and

managing change; staff professional development; school culture; policy; pupil, parent/carer and local community involvement; curriculum planning; teaching and learning and working with external agencies in a range of contexts such as Personal, Social and Health Education and Citizenship' (DfEE 1999, p.3).

Existing health promotion initiatives have many overlaps with the ambitions outlined in HSC's *Revitalising Health and Safety* strategy (DETR 2000). Essentially they aim to strengthen the provision of risk education for young people by providing support and guidance to education professionals.

To reinforce the importance of risk education for school pupils, changes have been made to the National Curricula for England, Scotland and Wales. Over recent years, subjects like 'Citizenship' (QCA 2000) in England, 'Health Education' in Scotland (LTS 2000) and 'Personal and Social Education Framework' in Wales (ACCAC 2000) have been introduced or built on existing education programmes for health, safety and risk education. In line with the growth of school based risk education initiatives, the National Curricula have evolved over recent years and they now incorporate numerous references to health, safety and risk education.

More recently HSE contributed to the production of a Department for Education and Skills 'Safety Education' guidance document for schools (DfES 2001). This guidance aims to familiarise teachers with basic safety education requirements and recommends positive approaches to safety education.

2 AIMS AND OBJECTIVES

The aim of this research was to provide an initial insight, by means of a targeted case study approach, into issues surrounding the delivery of risk education in State schools in England, Scotland and Wales. Specific objectives were to obtain feedback from a sample of teaching staff regarding:

- their knowledge of the requirement to teach risk, health and safety concepts;
- their interpretations of what constitutes risk concepts;
- the quality of guidance on teaching risk concepts - including sources;
- the approaches they have adopted in teaching risk concepts;
- perceived barriers to teaching risk concepts;
- their insight into 'what works' (and what doesn't) and what types of approaches / examples are being used.

These objectives have been addressed by undertaking a series of comparative case studies at seven schools, with a view to establishing a detailed contextualised insight into:

- levels of awareness in schools regarding the requirement to teach risk concepts;
- how schools have interpreted their obligation to address risk issues;
- the nature and extent of risk education at a range of key stages;
- teaching staff understandings of risk concepts;
- the needs of teaching staff regarding guidance on delivery of risk concepts;
- the relative merits of a range of techniques and approaches adopted to teaching risk education;
- the nature and extent of any training needs for teaching staff in delivering tuition on risk concepts.

This research aimed to establish whether any 'gaps' exist between education policies / programmes and the delivery of risk concepts in the classroom (see Dant & Francis 1998; Green & Thurston 2002). In particular, the research aimed to provide insight into the extent to which National curricular guidance on addressing risk issues impact upon teaching practice. This research was also conceived as offering findings relevant to the design and development of HSE's future curriculum related risk education strategy and guidance, including the development of teaching resources.

3 RESEARCH DESIGN

THE SAMPLE

Insight into the provision of risk education was gathered through a series of interviews with teaching staff (N = 51) at a sample of UK primary and secondary schools (N = 7) (see table 1). From the outset, the HSE recommended that the study should focus on the practice of teaching of five subject areas; i.e. Art, Information Technology, Physical Education, Technology and Science (or their National equivalents), these being areas where there exist National Curricular obligations to address the teaching of risk concepts. In addition, Personal & Social Education related subjects have been included. The sample of teaching staff responsible for the delivery of material in these subject areas were interviewed on a one-to-one basis and asked to discuss their approaches to teaching risk concepts.

	Subject area					
	Art	Technology	IT	PE	PSE	Science
Secondary Head of Department	4	7	5	5	6	6
Secondary Other	-	2	-	-	1	2
Primary Subject Organiser	2	2	1	2	3	2
Primary Other					1	

Table 1. Number of teachers interviewed for each subject and stage.

3.1 INTERVIEWS WITH TEACHING STAFF

A semi-structured interview approach was adopted as the primary method of data gathering (see Appendix 1: Interview Guide). Eliciting data in a semi-structured format has the advantage of encouraging a freely associative interaction, allowing respondents to emphasise and articulate the issues they consider important, while at the same time providing a degree of commonality to the issues addressed, such that comparisons and contrasts can be drawn between respondents. This type of approach to data elicitation has been widely demonstrated as offering a potentially rich and valuable insight into individual's experiences and their opinions. It allows the researcher to explore issues about which little is already known, whilst maintaining a desirable level of consistency between interview discussions, thereby allowing comparability between responses. Semi-structured interviews, while based on predefined questions, have the advantage of maintaining flexibility for exploring issues which spontaneously arise during the course of the interview process.

The motivation for adopting this approach arose from the current deficit of knowledge about the teaching and learning of risk concepts within school contexts. Indeed, there has been little previous research conducted to address anything resembling the substantive issues raised in HSC's Action-Point 33, or HSC's risk education progress report (HSC/02/10). Under such circumstances research remains fundamentally exploratory and should, in the first instance, aim to capture new insights about the phenomena in question, before quantification of findings by more formal means.

3.1.1 The Interviews

All interviews were conducted on a one-to-one basis and were of between 30 to 60 minute's duration. The interviews aimed to gain a broad insight into the teaching of risk education, within both primary and secondary schools. Emphasis was placed upon exploring:

- the type of health, safety and risk issues that addressed within schools;
- the approaches adopted when attempting to equip pupils with general life skills that help them to manage risks;
- the planning of lessons and sources of guidance that are used;
- the risk education topics that pupils respond well to;
- any barriers to teaching and learning about risks; and,
- the type of risk education support that would be valued by teachers.

The interviews were ordered following the normal conventions:

- Background information on the research and an outline of the interview were provided for participants.
- The questions were arranged into sections: (i) to discuss the main sources of guidance; (ii) to address risk education issues and methods; and, (iii) to address general teaching issues.
- Initial broad based questions were followed by more specific, directed, questions or probes.

3.1.1.1 A note on 'risk education' and terminology

A principal aim of this study was to provide insight into the nature and extent of risk education currently being delivered to the 5-16 year age groups. HSC/E have adopted the term 'Risk Education' when referring to the process of imparting understandings of how to recognise and control health and safety risks and welfare education within schools and colleges.

Early discussions with teaching staff revealed that they were unfamiliar with the terms 'risk education', or 'risk concepts'. Furthermore, when using the general term 'health and safety' in relation to school contexts, the majority of respondents immediately assumed that reference was being made to statutory requirements and health and safety regulations. This finding is of interest in itself, but also highlights the importance of and potential pitfalls surrounding the terminology in this area, its potential for misinterpretation and general opaqueness. Confusion over the concept of risk has been found to be significant in a number of other studies, while the concepts of 'health' and 'safety' are considerably more intuitive for many.

In view of the potential for ambiguity and confusion, prior to the commencement of interviews it was necessary for the interviewer to carefully define the focus of the topics of interest. To further reduce the scope for ambiguity the terms used in discourse with interviewees were generally health, safety and well-being. Thus, the issues of interest surrounding the delivery of risk education were probed, in a functional sense, without direct reference to the nebulous concept of risk itself, i.e. to avoid confusion and misunderstanding, teachers were asked to discuss health, safety and well-being issues and topics that arise during school lessons. Another means for eliciting relevant responses and generating discussion was to mention likely risk education topics (e.g. 'bullying', 'healthy eating').

Social scientists are frequently confronted with situations where the phenomenon being studied escapes definition in common terms. In the current context, this issue reflects differences in the use of language by expert and lay actors. The elicitation approach adopted was, therefore, carefully structured to take account of this, using language that was familiar to respondents, and

care was taken to avoid research questions based on any idealised preconception of risk education.

3.1.1.2 Qualitative Data Analysis

The transcript data collected during interviews with teaching staff were coded and categorised by means of a thematic analysis; the analysis followed conventions outlined by the methodology commonly conceptualised as ‘grounded theory’ (Strauss & Corbin 1998). This approach provided a means of identifying a set of core issues while providing a framework against which the feedback from individuals and groups could be compared and contrasted.

Thus, the analysis performed here has attempted to identify, develop, and discuss the relationship between identified concepts and issues. Essentially, we have organised the data into discrete categories according to their properties and dimensions, using description to elucidate those categories. The findings have been organised in terms of our understanding of the HSC/E’s risk education strategy. Where appropriate, we have presented aspects of this strategy in relation to the phenomenon under investigation.

3.1.2 The Selection of Schools and Teachers

Teaching staff interviews were conducted in order to establish the nature and breadth of view on the issues of interest. Respondents in this study were selected on an opportunity basis. While there is no transparent reason for the views they expressed to be unrepresentative, it must be borne in mind that the sample size was by necessity small and recruited on a voluntary basis. This approach was predicated by the prevailing resource constraints combined with the need for depth of investigation in a study of this type. In essence the study reported on here sought to *understand* salient issues rather than *quantify* the strength of identified issues, per se.

In view of the multiplicity of demands on teacher’s time, the research team adopted a flexible approach to data gathering. Interviews were conducted at times that suited the school and participating staff. In some instances interviews that were of shorter duration than might have been preferred, due to the practical constraints of the interview environment.

Initial permission for access to teaching staff was secured by telephone to relevant Head Teachers. In two cases respondents were introduced to the research team through a third party (e.g. Local Education Authorities - LEAs).

Of the Head Teachers that were contacted (N = 131), 95% declined to allow their staff to participate in the study. Reasons given included:

- staff already participate in a substantial number of education initiatives;
- the size of teacher workload prohibits involvement in many voluntary tasks;
- the burden of forthcoming school inspections.

Nearly all Head Teachers, including those that agreed to participate, indicated that teaching staff already felt harassed, and that their ‘free time’ was, on the whole, used to provide cover for colleagues, or pastoral care duties. It is perhaps notable, however, that a number teaching staff who participated in the study commented to the effect that the interview was a welcomed change from teaching duties.

Upon gaining access to schools, the main target respondent group was teaching staff, including Heads of Department (sometimes referred to as ‘Heads of Faculty’) and Heads of Year. In most cases the Head Teacher selected the Head of Department (or, in the case of primary schools, subject supervisor) to represent the school and participate in the interview.

Head Teachers were asked to select staff to take part interviews that had specialist/subject relevant knowledge within each of the six subject areas (i.e. art, DT, IT, PE, PSE or science). In three cases subject support staff (e.g. technicians) participated in the interviews. At five schools opportunities were provided to interview the Head Teacher.

The majority of the interviewees could be classified as experienced teachers, who had been practicing for more than five years. As a result, in many instances, they were able to draw upon teaching experiences from a range of contexts. They tended to be familiar with the views of colleagues and were aware of the teaching experiences of other staff within their departments. Only two newly qualified teachers were interviewed.

4 TEACHERS AND THE MANAGEMENT OF RISK EDUCATION

The National Curricula for England, Scotland and Wales require teaching staff to provide pupils with a range of opportunities to learn about health, safety and welfare issues. Ultimately teachers are expected to equip pupils with the requisite capabilities for assessing and managing risks in a number of contexts (see e.g. Annexe 2).

Within this section of the report we discuss two related education issues,

- (i) teachers' reported usage of teaching guidance resources; and,
- (ii) the approaches that teachers adopt in respect of risk education.

The discussion describes the process of lesson planning and its relationship to teaching practice. Furthermore, we provide insight into the visibility and utility, and teacher's interpretations of teaching guidance resources.

Although we present issues surrounding the uptake of guidance materials and teaching approaches separately, these are individual threads that, together, comprise a detailed insight into a broader and more complex web of risk education teaching. It is hoped that the discussion will provide valuable insight into teachers' practical knowledge and their conceptualisations of risk education.

4.1 LESSON PLANNING & GUIDANCE

A primary task for classroom teachers relates to the planning and preparation of lessons. There are a range of sources of guidance relevant to the planning and delivery of risk education and teaching of risk concepts, (see Shearn & Weyman 2003a). Guidance resources vary widely in the extent to which they deal with risk education issues. For the most part they are restricted to the provision of general recommendations that require translation into practical lesson objectives and activities by schools and teaching staff.

4.1.1 Risk Education Guidance from Curriculum Authorities

While National Curricular guidelines, goals and related assessment criteria exist they are not intended to be overly prescriptive and should not be read as rigid plans which have to be followed slavishly. Nevertheless, the National Curricular guidelines are primarily focused on structure and balance; they constitute a fairly tight constraint on learning outcomes; and they have the form of an objectives-led method (Eisner 1967).

In the following interview extract the interviewee identifies the National Curriculum as a significant influence on teaching and the planning of lessons:

Interviewer: How would you describe the National Curriculum today?

Respondent: *Because of the quantity of material that's there, it does dictate very much what is taught in the science lessons.*

Interviewer: Day to day?

Respondent: *Almost, yes, almost. And you know, although there has been some modification to it since its sort of conception, there are still significant amounts of material so it does dictate very, well that's the word it dictates.*

On the basis of these and other similar comments, it became clear that respondents were of the opinion that meeting the general requirements of National Curricula guidance necessitated a very full programme of classroom work. A significant constraint on classroom teacher's

selection of lesson content was also said to be the quantity and scope of curricular learning milestones and objectives, these being said to be variable. From the perspective of most classroom teachers, the National Curricula constitute the structural backdrop which underpins the content of a significant proportion of classroom activity. That said, teaching staff interviewed appeared to consider that they and their schools are able to maintain a significant degree of autonomy regarding the content of their teaching activity, for example:

“...we have some degree of choice of which activities we choose to do but again there are guidelines for when we are teaching these activities, what we must incorporate within the courses. So on the whole it really is up to the school what they decide they are going to teach...”

Similarly,

“Curriculum guidance tends to be very general. Guidance states that pupils should hammer, saw and cut. The means that we use to impart these experiences is up to us”.

Although a significant number of teachers identified that the National Curricula provide clear guidance for learning attainment, the programmes of education are open to interpretation and there is scope for outcome objectives to be realised in a number of ways. Within the boundaries of the National Curricula, schools have a significant amount of flexibility when selecting topics, approaches and activities. The teachers indicated that guidance materials provide only broad requirements for teaching.

The National Curricula guidance documents for England, Scotland and Wales, and the guidance materials produced by the various Examination Boards include a significant number of references to and recommendations relating to risk education.

Most of the teaching staff interviewed were able to demonstrate a general, but rather non-specific, awareness of the Curricular requirement to address health, safety and risk issues, and the need to raise pupils' awareness and understanding of risk control. For example, in cases where guidelines recommend that pupils conduct activities that have known inherent risks, such as working with sharp tools, the majority of respondents indicated that they would provide safety briefings and demonstrate good practice.

As one might anticipate, respondents were not always able to recall any specific details of the National Curriculum requirements for risk education, but were able to outline the general sentiments and underpinning logic. Thus, it would seem reasonable to infer that this understanding *is* either directly or indirectly *derived from* the risk education requirements present within the respective National Curricula. In many cases, respondent's apparent awareness seemed to be more firmly rooted in their perceptions of inherent hazards and associated risks, within their subject specialism, rather than reflecting intimate knowledge of National Curricular guidelines. Most indicated that their experience, subject knowledge and acquaintance with the pupils' abilities constituted a primary influence on their approach to addressing risk education issues.

On the basis of teachers' comments about flexible approaches to the interpretation of National Curricular guidelines, their approach to addressing risk education requirements (see also below) routinely appeared to be somewhat ad hoc and unstructured, rather than reflecting a conscious and deliberate decision to address such issues or include them within broader lesson plans. The indications are that in most instances risk education aspects of lesson content was generated as an outcome of 'real-time' considerations during the execution of a lesson, at the point of delivery.

Given that the majority of the teachers we interviewed were senior staff or heads of department, we are only able to comment to a limited degree on the direct influence of National Curricular guidelines on junior teachers. However, it is well established that junior staff are generally mentored by more experienced staff, in particular with regard to meeting National Curricular requirements in planning lessons. It would also seem that the level of attention paid to risk education within guidance documentation generated by individual departments within schools is likely to be variable, and to be focused on regulatory requirements for health and safety risk management, rather than the deliver of learning objectives in risk concepts.

4.1.1.1 The General Teaching Requirement (England)

During interviews at the sample of English schools (N = 5), teachers were presented with a copy of the English National Curriculum's 'General Teaching Requirement' (GTR) for health and safety (see Appendix 2: The English National Curriculum General Teaching Requirement for Health & Safety). This teaching requirement was recently introduced to the National Curriculum for five subjects (i.e. Curriculum 2000 for Art, D&T, IT, PE and Science). It is a mandatory requirement for risk, health and safety teaching provision. Broadly summarised, the guidelines state that risk education 'should be' addressed at some (albeit unspecified) level. The GTR requirement was introduced with a view to raising the profile of safety education through the National Curriculum. Each interviewee was asked to discuss the GTR and identify its impact upon teaching. All respondents indicated that they were not aware of the GTR requirement, and were not familiar with the specific requirements.

Although the interviewees could not provide evidence of any direct impact of the GTR, they were able to offer valuable perspectives on its potential for impact. The following point of view was representative of a number of respondents:

'I would have said that we have taken as read, that health and safety is such a fundamental part of D&T that we will have done it anyway. We did do it and still do, and I don't think there's anything specific enough in there [the GTR] to alter anything'.

This response provides an important insight. Having read the GTR and reflected on its content, the teachers did not recognise anything new within the requirement, or anything that would alter their current teaching practices. On the whole, they indicated that related considerations would be implemented as a matter of course.

Given that there is a range of teaching requirements, and that teachers will tend to focus on core subject learning points, it is perhaps of little surprise that the teaching staff did not recall this *general* requirement. It is widely reported that there are high demands upon teaching staff and that they are required to perform an increasing range of duties. When planning lessons and curriculum content, teaching staff might reasonably be assumed to be focused on what to them may appear to be other, more salient and pressing teaching priorities.

In addition, a significant proportion of English School respondents commented that the GTR does not differ significantly from other health and safety requirements and regulations. For example, teachers have a duty of care when working with children, and they have common law requirements for acting *in loco parentis*. In the context of discussing risk education, teaching staff were more likely to refer to statutory regulations for workplace health and safety management (i.e. basic requirements that lessons are conducted in a safe manner and in a safe environment). Teachers aligned the GTR with these duties for care and statutory regulations for workplace health and safety management.

On the basis of the available evidence it might reasonably be postulated that teaching staff do not perceive any tangible distinction between statutory requirements for *risk management* and curricular requirements for *risk education*. For example, the teachers did not recognise that the GTR was specifically orientated toward *learning opportunities* for pupils, or that on these grounds it could be understood as distinct from the duty of care and statutory health and safety regulations.

Evidence provided during the interviews indicated that, despite the teacher's apparent awareness and knowledge, the National Curriculum GTR for risk education retains a comparatively tenuous hold upon them, and has far from transformed teachers into strategic risk educators. This insight should provide some food for thought when attempting to influence future directions of risk education. With respect to the GTR, these findings contain important messages about the uptake and function of guidance and teaching requirements.

4.1.2 Risk Education Guidance and Health & Safety Regulators

The Health and Safety at Work Act 1974 places a duty on employers to provide instruction and training about health and safety. The interviews provided evidence that related health and safety requirements for schools have the potential to impact on pupil's risk education (see also Shearn & Weyman 2003a). For example, measures taken by school staff to implement safety regulations appear to have an effect on teaching practices and learning outcomes. Thus, at a practical level, pupils are encouraged to observe the school's health and safety rules; a process through which they learn about hazards, and informally learn about institutional cultures of risk management. Almost all teachers described this process, and their efforts to engage pupils in the control of risks, e.g. the removal of school bags from walkways, or the removal of unhygienic waste from work surfaces.

It would seem reasonable to infer that regulations are a positive motivator for teachers to provide topic relevant information about health, safety and risk control during lesson activities. Teachers provided some direct evidence of this link when identifying regulations and their impact upon lesson content. This insight is valuable, as it signifies that teachers typically possess an awareness of basic health and safety requirements, and that pupil's may even be routinely provided with examples of how, why and when regulations are implemented. Furthermore, it signifies the subtle ways in which regulations can influence school safety cultures and risk education learning outcomes. The following description goes some way to illustrate the nature of regulatory impact upon teaching and learning outcomes for home economics:

'Every time there is a health-scare, that affects us because we've had the eggs, the cling film, the beef, all of these things have an impact on us. Carrots, there was a thing with carrots where you had to peel them. All of that, there'll be something that will come in, and that has to be written in [to the lesson plans]'.

Clearly, the levels of staff commitment to regulations are subject to variability, both between individuals, and different schools environments. Indeed, a wide range of variables impact upon people's reactions to risk, and their commitment to the mitigation of its consequences.

In a few instances, notably for Science and PE, a number of respondents opined that regulations can have a negative impact upon learning outcomes. These individuals typically went on to qualify this position by illustrated ways that health and safety regulations, or 'media scares', can result in the erosion of pupil learning opportunities on the grounds of emergent safety concerns. For example:

‘But there are still things that we are unable to do because of health and safety, which is strange because [in other regions] they are able to do them. For example dissections, we are not able to do heart dissections, lung dissections, eye dissections in schools. ... What we do now, when we come to that part of the course, is watch it on a video and it’s not terribly exciting’.

For this teacher, safety concerns have led to the replacement of proven curriculum related teaching approaches with arguably inferior methods of teaching. A number of other respondents were also of the opinion that safety concerns can sometimes have an undesirable impact where they result in the degradation or deletion of learning opportunities, particularly where these, in themselves, provide opportunities for pupils to practically engage in the control of risks, within controlled and supervised environments (see section 6.3).

Individual teacher’s awareness of their school or department’s health and safety policy varied considerably. Perhaps unsurprisingly, designated Safety Officers and Heads of Department appeared to have higher levels of insight, although this was not so in all cases. For the majority of interviewees, the level of knowledge surrounding policies was low. The following response to questions about the health and safety policies was common:

Interviewer: Does the school have a health and safety policy or a health and safety curriculum?

Respondent: *I am presuming there is a health and safety policy, I don’t know, I know, actually no that’s a lie; we were asked to conduct [risk] assessments. This last school year we had to look at a whole load of our areas and see if there were any health and safety issues. We had to fill all these forms in for John. Because people didn’t do it properly he was like chasing round, and he got them in, and it was just like, it was so simple what you had to do.*

A range of similar comments from the interviewees indicated that the level of uncertainty surrounding the content of health and safety policies and their implementation was high. Furthermore, it was clear that attitudes toward risk assessment varied, a number of teachers recognised their value whilst others considered them to be an unwarranted burden. Preliminary interviews, that constituted groundwork, with Local Education Authority Health and Safety Officers have confirmed this general appraisal, that active engagement with health and safety policies differ significantly between schools and individuals.

The longer serving teachers mentioned there has been a notable increase in education related health and safety regulations and that present-day teachers have a heightened awareness of regulations. Indeed, numerous teachers were able to demonstrate awareness of various subject related health and safety issues, and in some cases provided a general non-specific insight into regulations. However, a significant proportion of respondents also demonstrated ambivalence toward regulations. In the majority of cases, they referred to ‘common sense’ and experience as reliable guides for best practice in health and safety for teaching practice.

4.1.2.1 Changes in Regulatory Controls and Litigation

Health and safety regulations for schools are subject to periodic changes. In the event of any change, notification would almost certainly come through the LEA. For example, when regulations are updated and they have potential to impact upon current school activities, the LEA is responsible for sending written notification to all schools within the region. The level of communication between schools and LEAs appears to depend on a range of factors, notably the

level of LEA assistance, the relationships between school and LEA and the past history of communication. There is little or, in most cases, no LEA provision of specialized advice on risk education. We were able to gather evidence that a small number of LEA health and safety officers are beginning to address risk education issues.

Only one respondent spontaneously mentioned litigation as a possible motivator for health and safety management. However, this teacher's position did not differ significantly from related prompted responses, that, taken in summation, suggest that teachers have a tendency to err on the side of caution, with the aim of minimising opportunities for pupils to harm themselves. On this topic most responded that litigation only affected people if they were negligent.

Interviewer: Does the fear of litigation have an impact upon teaching?

Respondent: *Yes I would say so, but I don't take them very seriously because I'm doing my best all the time, they can't expect anymore. And I do the first-aid in this school so there's always the potential that I will make a wrong decision, or I'll not get to somebody fast enough, or when I leave a class to see what's happening - although some classes you leave, some you don't. I don't take it seriously because as long as I am trying my hardest. ... I don't consciously think, 'will I get sued?'. I think, if you were to think like that you need to get out of it.*

Maintaining safe school environments is an ongoing struggle. Respondents frequently expressed concerns about the maintenance of the school. What was perceived as a fundamental lack of resources to maintain the schools was cited as evidence of the main cause of 'the problem'. It was suggested by some that the quality of maintenance was likely to have a degree of impact on the pupils' risk education – although it was unclear whether this was likely to be a positive or negative impact.

4.1.3 Other Possible Sources of Risk Education Guidance

It is often the case that school departments or subject specialists develop their own subject curriculum. Respondents described the development of the school curriculum as a process that involves drawing on an array of information sources. On the one hand, the development of a subject school curriculum will be influenced by a number of external influences, e.g. policy trends, available teaching resources and the National Curriculum. On the other hand, much of its content will be shaped by internal, or local, considerations, e.g. availability of school facilities, what has gone before, the turnover of teaching staff, teacher's abilities and interests, pupils' abilities and interests, and the wider school community interests.

For many teachers, especially junior teachers, the school's internally developed schemes of work and lesson guides represent an important source of curriculum guidance. These may be departmental guidance materials that have evolved over a number of years. Generally, they tend to be developed by the senior members of staff, suggesting that the responsibility of interpreting National Curriculum guidance for risk education will be partly removed from junior teachers³. The degree to which risk education requirements are translated into these internally produced documents is likely to be variable⁴.

³ This situation will vary depending on the size of the school and the type of leadership. In some circumstances no structure will be imposed and teachers will be left to make decisions about the shape of their work.

⁴ This research did not involve an evaluation of internally produced documents. The comments we provide regarding these documents are based on the opinions of teaching staff.

In addition to the influence of internal sources, respondents, for the most part, indicated that there are a number of important external influences that contribute to the development of school curricula. In particular teaching is often structured following the content of education sector publishers ('bought-in') schemes of work or exercise books. This seemed most prominently the case for science subjects. These resources tend to be strongly influenced by National Curriculum guidance and, as a result, often include health and safety requirements, and in some cases, risk education content. These publications have the potential to directly influence the content of lessons as they provide suggestions for topics and classroom exercises. Teachers also indicated that the examination boards and awarding bodies have a direct impact on the shape and content of lesson plans at the secondary level.

Evidence from the interviews indicates that PSE subject teachers are most likely to draw on outside expertise provided by groups that promote education about health, safety and risk for young people. These agencies provide a range of curriculum support in the form of educational pamphlets, web-sites, videos and presentations (examples of curriculum support groups and resources are provided in Appendix 3). Nationally there seems to be no co-ordination between these schemes. Teaching staff indicated that they drew on these assorted resources if they became visible through publicity or personal contacts (see also section 7.4.1). The risk education content of PSE related subjects is significantly different to the other subjects that were the focus of this research; we discuss this issue at more length below (see section 5.2.4).

It is apparent that, compared with other subject areas, PE and Science teaching staff are more inclined to use health and safety guidance from non-government sources (notably from BAALPE (e.g. BAALPE 2001) and CLEAPPS; especially publications). One explanation for this may be that, arguably, these subjects require greater levels of specialist knowledge for health, safety and risk management due to the subject matter, knowledge that on occasions has to be sought from other expert/professional sources, either in the form of training or published materials.

Respondents were also asked if they were aware of the National Healthy Schools Standard (see e.g. DfEE 1999). This is a national funded scheme that promotes health education. None of those interviewed seemed to be aware of, or actively engaged with, this scheme. This is despite the fact that it has been reported that this scheme has attracted interest from all English LEAs and approximately 8000 schools. What this means in practical learning outcomes is unclear and no evidence was provided during the interviews. This finding would appear to highlight the variable levels of take-up of even widely publicised National education schemes / initiatives.

4.2 RISK EDUCATION STYLES & METHODS

A core element of the current research was to gain an insight into the range of teaching methods adopted when communicating risk issues to pupils. In this section we describe issues surrounding the teacher's conversion of curriculum guidance and teaching points into the practical activity of teaching risk education.

4.2.1 Background to Teaching Methods for Risk Education

Teachers adopt a number of approaches when educating pupils about hazards and the control of risks. In many instances educators combine methods with a view to them being mutually supportive. For example, preliminary D&T, IT and science lessons at the secondary education level will include an induction session intended to raise levels of awareness about laboratory hazards and the control of risk; e.g. pupils would be introduced to the work environment and the variety of tools and materials particular to the environment. Subsequent lessons would be

practically orientated and require pupils to draw on this information whilst performing supervised tasks that involve a degree of risk. The selection of the method for risk education will depend upon a number of factors, including the nature of the subject or topic, the preferences of the teacher or pupils, and the availability of resources.

The majority of teachers indicated that they would revisit health and safety issues '*as and when they were required*', during the execution of the lesson. In general, they indicated that they could not envisage teaching a dedicated risk education lesson, or risk education topics for more than a few consecutive minutes in any lesson. The following viewpoint was common amongst interviewees:

Interviewer: Are there any methods you adopt? You mentioned giving pupils instructions, repeating the instructions, 'pick up the object from the floor'. Are there any other methods you use?

Respondent: *Certainly, to a certain extent. There are certain worksheets that will refer to it, but most of it I would say is oral, and we have a code of conduct [department safety policy], which refers to certain safety things. But there isn't a specific time that we sit down and teach health and safety. I would just say it's the undercurrent all the time in every class, always I would say.*

In many of the lesson activities that involve a degree of risk teachers find it necessary to repeatedly remind pupils to follow safety procedures and take steps to control risks. In this respect, the prior identification of formal rules provides only a foundation on which to build pupil's understanding of risks. The rules need constant reinforcement and, as indicated by many teachers, are often only understood or adhered to following a near miss (or through learning-by-doing processes).

During the interviews no evidence was apparent that teachers adopt a committed, comprehensive and coherent approach to risk education within schools. Neither did there appear to be any efforts to operationalise a cross-curricular approach to risk education. Teachers did, however, mention some of the obvious connections in health education for science, home economics and PE, although there was no evidence given that the school curriculum for subjects was formally integrated.

In the following sections we discuss the range of teaching methods that are employed when addressing the risk education needs of pupils. Although an evaluation of teaching methods is beyond the scope of this study, we do provide some assessments derived from the interview discussions.

4.2.1.1 'Spot the hazard' sheet – the identification of hazards

A frequently cited method for raising the pupils' awareness about the hazards is the 'spot the hazard' sheet approach. These are pictorial diagrams which provide examples of risk scenarios and / or dangerous practices. These are one of the first steps that teachers might take to ensure that awareness of hazards is thoroughly consolidated before moving on to the next.

"Oh one thing we do, is we do have a work sheet in year 7 as a homework where there is a series of pictures and they have to write down the hazards. Like a picture of someone with a cup of coffee on a monitor and that kind of thing, you know hundreds of sockets on a plug and so I suppose we do it in that sense, yes".

However, a limitation is that 'Spot the hazard' sheets are unlikely to furnish the pupils with the requisite degree of risk awareness, or skills for risk control. Sheet exercises provide some value

as a compliment to additional exercises that require the pupil to assess risks in the actual environment, etc.

Similar exercises relate to raising pupils' awareness of 'hazard symbols' and the hazards which they refer to. In a number of cases teachers reported that pupils were required to design and make their own hazard symbols.

4.2.1.2 Practical demonstration and learning-by-doing

Practical demonstrations are a widely used method for informing pupils about the skills that are required when performing classroom exercises. Furthermore, demonstrations provide an opportunity for discussing the potential risks associated with activities. A typical scenario involves the teacher providing instructions and practical demonstration of the task. As part of the demonstration, the teacher will identify risks and provide instructions about the best ways to manage risks. A number of respondents cited practical demonstrations as one of their standard methods for demonstrating methods of risk control.

When asked to comment on the fulfilment of curricular risk education requirements (e.g. the GTR), teachers referred to practical demonstrations as the main mechanism through which they were fulfilling related requirements.

The practical demonstration is typically followed by pupils led exercises in which they are expected to carry out the instructions provided. When working with tools, equipment and materials, during a practical activity, pupils are engaged in a learning-by-doing process. This provides opportunities for the pupils to demonstrate and practice their abilities to manage and assess the activity related risks, in a controlled environment. Given the nature of risk learning, we feel that learning in this manner is likely to constitute an effective way to sensitise pupils to the construction of risk during activities in real-world situations. Many teachers corroborated this viewpoint:

“A nice part of the learning process, is actually doing something for yourself, is part of the learning process. The teacher would obviously then support any demonstration with personal instruction if a pupil were having any particular problem. You cannot just pick up a book and say, read this and you will be able to saw. It is not that type of thing it has to be carefully demonstrated and reinforced, it happens to be instruction”.

Many curriculum-related topics for Art, D&T, IT, PE, and science are associated with hazardous practical activities that provide pupils with the opportunity to assess and control risks as part of a learning-by-doing process. In the context of discussions about teaching methods it was often mentioned that classroom safety was not simply about protecting pupils from harm, by removing hazardous activities, or simply about raising their awareness of risks. Respondents generally recognised that pupils need to learn about the relevant risk issues and how to control hazards *for themselves*.

4.2.1.3 Presentations by outside experts

In certain circumstances schools will call on outside experts to conduct subject (or school curriculum) related presentations for pupils. This practice is most commonly associated with curriculum support for 'personal and social education' subjects. A number of interested stakeholder groups (e.g. charities, government authorities) provide guest speakers on a range of topics. During the interviews teachers mentioned several related sources of support (see Appendix 3).

From the perspective of teaching staff there are a number of benefits to be gained from visits by expert speakers:

- Teachers held that most pupils/classes respond well to outside experts:

“Having people from outside, and things like that, work a lot better than teachers that they know and see everyday, because students don’t always want to talk to somebody that they know very, very well. So using outside guest speakers works a lot better at times”.

- PSE subject teachers mentioned that they were not aware of all the relevant issues for certain topics (e.g. drug use), and that outside experts could fill the gaps in their knowledge; and,
- Outside experts often provide particular skills not held by school staff (e.g. qualified counselling skills, safety assessment skills).

One drawback relating to the introduction of outside experts was widely cited: outside presenters prefer to meet all form groups for a particular year(s) in one sitting, thereby removing the need for multiple visits/presentations. This poses practical problems for schools when attempting to align timetables around the availability of guest speakers.

4.2.1.4 TV broadcasts, videos and CD-ROMs

Teachers indicated that risk education related videos are useful resources that have the potential to raise levels of awareness about hazards, risk and risk control. In particular, they graphically illustrate topic-related hazards (e.g. in relation to railways, waterways and laboratories, etc.). They can also function as a useful catalyst for group discussion on risk education topics, or can reinforce messages that the teacher has presented. Teachers appeared to be particularly appreciative of videos that are supported with lesson plans and suggestions for related activities (e.g. discussion topics, and practical tasks).

It was widely reported that school pupils become distracted from the core message of videos if the cultural reference points (e.g. language and dress) are out-of-date, or do not address the peer group. It can be assumed that risk messages will need to reference contemporary cultural codes if they are to gain acceptance by culturally astute pupils. Teachers also sounded caution about the communication styles adopted in videos. Unfortunately there did not appear to be any consensus on what might constitute ‘best practice’. It is plausible that both teachers and pupils hold a variety of preferences, and consequently that videos will be well received with some audiences and not others.

The teachers did not report that they were using any CD-ROM or TV broadcast based risk education resources, however, they did report that these mediums are used in relation to other topics.

4.2.1.5 Local ‘accident stories’ to illustrate potential risks

For the most part, we anticipated the range of risk communication methods that teachers adopt. One exception was the use of ‘accident stories’ as a useful means of communicating risk. Teachers mentioned that pupils respond positively to stories that were based on local community or school events and incidents, that they show an interest and engage in conversation about the issues. Stories represent a potentially useful method for addressing topics where practical or real world events cannot be emulated in a safe manner. A number of teachers provided examples of accident stories:

Interviewer: I mean, you mentioned at the start about relating risk messages to their own experiences.

Respondent: *Yes. If someone in their year group had a little accident and word gets around, that can be quite poignant. Or a near miss. If something does start spinning round on the pillar drill, they know that something spinning round will hurt their fingers, and it does. Suddenly the drill that bites it suddenly whips it round, and so they can see that, that's dangerous.*

One teacher provided the following example,

“We are looking for ways of making them aware, you know for instance about soldering. You can imagine, well you can't imagine the children we teach so I'm not even going to begin. I remember a few years ago, I had one lad who was off his head, big 3rd year, and he walked through the department and there was another classroom that I was in and he picked this bloody soldering iron up. He didn't pick it up with the end, he picked it up with the bloody hot bit, it was red hot and he came crying to me with this thing across here. And really you know, I said, 'well you can put it under the tap but there is nothing else I can do'. You know there was nothing to stop this child doing this, right. But I use that in my teaching now as an explanation of what the children need to be careful of when they are using soldering irons you know. And I say to them that, 'when I had this big 3rd year boy who thought he was really hard, and he came crying to me'. And you know its things like that which make it more sort of realistic to the children”.

The accident stories are essentially anecdotal accounts through which pupils can identify their own agency. From the teacher's perspective, they provide very clear messages about hazards and the potential harm that can be caused. Furthermore, they potentially have a covert 'function' of presenting a moral message and constructing consensual understanding about desirable behaviour. The stories tend to contrast with technical accounts of risk assessment, but nevertheless represent an important method of risk communication between lay actors.

4.2.1.6 Group discussion and life skills training approaches

Pupil participation in group discussions potentially constitute a role-play and life skills training approach for risk education, and are commonly utilised during PSE subject lessons⁵. Very often these approaches draw on risk topics as the vehicle through which transferable skills are developed.

The use of non-didactic approaches with an emphasis on group discussion or role-play has gained increasing popularity over recent decades. This is especially true for risk communication topics; it is widely believed that dialogue is more effective than a one-way transfer of facts and rules from the teacher to the pupil (Reid and Massey 1986). Nevertheless, teachers indicated that information giving is often interspersed with the group discussion approach: “we provide information for discussion, for them to make informed decision”. During the group session the teacher encourages pupils to discuss what they know about a subject, how it is portrayed in the media, what myths and truths surround the subject, and the scientific or other 'official' perceptions of the subject. The group discussion process is likely to expand pupil's knowledge of a subject, but also contribute to the development of important life or social skills, such as weighing up the evidence, recognising the available choices, appraising the alternatives and making decisions. Through using communication and decision-making skills during the

⁵ Subject teachers for the other subjects provided significantly less evidence that they use group discussion when addressing health and safety topics.

discussion of risk topics, it is anticipated that personal competencies for risk control can be developed. Although the outcomes cannot be controlled, the process has the potential to gain some measure of legitimacy and momentum through being a form of peer education⁶.

The emphasis placed on life skills training is highly visible within the PSE National Curricula documents.

4.2.1.7 The usage of personal protective equipment

Through participating in hazardous activities that require the use of personal protective equipment, pupils are introduced to a range of ways for managing their health and safety. It seems that in most cases PPE would be introduced through teacher led practical demonstrations.

4.2.1.8 Managing pupil behaviour as a form of risk education

Respondents frequently referred to the ‘constant vigilance’ required to maintain a sense of order and safety within schools. As portrayed in the quotations below, at least some teachers appear to feel that they are ‘doing health and safety all the time’, often in the form of pupil behaviour monitoring and control and raising risk awareness. A seemingly typical scenario would be that of a pupil, either intentionally or unintentionally, behaving in a manner that is likely to cause harm to him- or herself, or another person. The teacher on noticing the incident will instructs the pupil to stop what they are doing and to observe the safety rules.

“Health and Safety we’re doing it all the time. A lot of the time we don’t refer to it as such. The children just see it as ‘nagging’, but we are actually teaching all the things and reinforcing it and there’s a lot of arguments with the children over it. We might ask them, for safety reasons, to remove certain layers of clothing, and again that’s an argument with them”.

Similarly,

“And then basically it’s just constant vigilance really, making sure that children have got the skills, you know: ‘how do we get this out of here?’, ‘how do we pour this?’, ‘what do we do?’, ‘you know why we put the lid back on’, and all this sort of thing. And it’s just a pain really, this constant vigilance until they actually, you know, comply with. ‘We are not going to sit down while we are boiling that beaker of water. Why not?.’ You know, that sort of thing, and it just fairly quickly becomes second nature, which is what we are aiming for really”.

And,

Interviewer: How do you get the [safety] messages across to pupils, I mean, can you give me some examples?

Respondent: *Well, all the time you are reaffirming it, aren't you, you've been in a lesson you are reaffirming: ‘these are the standards that are expected in this particular area today, this is where the potential problems could arise if you don't think, and you are not sensible, and you manage it accordingly’. So it's not like, you don't just say it at the beginning of the year and then*

⁶ Peer-education is an important and influential process through which pupils (and adults) learn and collectively interpret the ‘rules from above’. Peer contact is typically more frequent than formal education processes and is based around important cultural codes and shared identities (Milburn 1995).

its forgot about, every time you meet the kids, whatever environment you are in, you are emphasising potential problems that could occur. I mean, that's how it's got to be, isn't it.

Although such supervisory practices are not part of a formal curriculum, respondents nevertheless indicated that they believed that this was an important part of risk education, and arguably the most regularly repeated method for raising pupil's risk awareness. Within the risk communication literature, related, less-formal methods stand as often-neglected or derided. Despite this, it is the method that teachers most readily associate with their work. It is likely that it has a very direct impact on the behaviour of pupils; firstly, to protect them from immediate risks, and; secondly, as a learning exercise about risks and rule following. Conversely, education methods that are recognised as 'nagging' could generate a range of negative outcomes. It would appear that opportunities exist to develop this most prominent approach to risk education, perhaps through reference to formal risk assessment insights and techniques.

4.2.1.9 Risk Assessments with pupil involvement

None of the respondents reported the involvement of pupils in developing formal risk assessments as part of their classroom activity, or other school activities. From the evidence provided, it would seem that the application of risk assessment is restricted to the informal education process, very much along the lines of question and answer process - i.e. the teacher poses the question, 'why are we doing the activity in this way?' in order to elicit the pupils' assessment of the task and the consequent risks. As discussed above, encouraging pupils to conduct informal assessments and to manage risk is an integral part of the teachers' work.

A number of respondents indicated that pupils of all age groups would conduct unprompted, informal assessments of risks during lessons:

Interviewer: And are pupils involved in risk assessments, or are they more...?

Respondent: *To a certain extent they do, I think they pick up on it, the teacher does take the responsibility and look around but some kids will come up and say there is a drip over there, for example. You might not be aware of it and again there's the risk of them slipping on the floor. So, I mean, they are aware of the issues that could affect their safety within the environment.*

4.2.1.10 Shock-tactics

A high number of secondary school teachers referred to use of 'shock-tactics' as a means to engage pupils in risk management and control. Accident stories and health and safety videos often rely upon some measure of shock-tactic. In most cases information or images are provided that show the potential harm of hazardous activities.

One teacher referred to a video (namely, 'Electric Graffiti') produced by the Electricity Association Services Limited, which draws on shock tactics to enforce a risk message. The video provides graphic evidence of the harm that electrocution can cause to victims, and portrayed the grief of family and friends following the loss of life. The teacher perceived that the video had a positive impact, based partly on the evidence that the pupils would regularly refer to the video, that it had created a lasting impression.

It is worth noting, however, that the balance of evidence over shock-tactics is that while they may contribute to knowledge and understanding of hazards, their value in terms of motivating cautionary action is generally accepted as brief and transitory.

4.2.1.11 A Classification of Risk Education Methods

During their daily work teachers are engaged in the organisation of classroom activities and are responsible for ensuring that pupils are well equipped with the skills for controlling risks. In the foregoing discussion we have outlined a range of methods that teachers adopt when fulfilling their responsibilities for providing risk education. With respect to school context, these approaches can be characterised under two general categories:

- (i) *Knowledge based* education that involves discrete stand-alone methods for raising awareness of inherent risks and the management of those risks; and,
- (ii) *Skills based* education that involves task-related activities and learning processes.

On the whole, ‘discrete stand alone methods’ focus on information giving and are distanced from practical activities. Information-giving aims to correct knowledge and beliefs about hazards (e.g. through outlining *dos and don’ts*), identify the potential consequences of risk taking behaviour and outlines ways of assessing and controlling the consequent risks. Knowledge based education methods work on the assumption that, given the necessary information, individuals are able to act in a rational and responsible manner and take responsibility for their own health and safety. The type of information provided for school based risk education topics can be wide-ranging, from information about drugs and the consequences of using drugs, to the safe storage of chemicals and appropriate action to take in the event of chemical spillage.

Given the nature of risk learning, skills based education, related to the performance of practical tasks, is likely to offer a well contextualised opportunity for pupils to develop skills in risk assessment and control. However, it remains the case that there are some topics covered by the National Curriculum that can only be approached in the abstract, for example, the risks associated with alcohol consumption and drug-taking. In these cases teachers typically appear to adopt group discussion and role-playing type approaches as a means of addressing the salient issues and cultivating the relevant life skills.

In Table 2 the approaches have been grouped under two general headings (i.e. *Knowledge* and *Skills* based methods).

Category	Method	Conceptual Underpinnings
<i>Knowledge Based</i> , discrete, stand-alone methods (top-down)	Induction Course, Rule Identification	Information giving
	‘Accident Story’	Information giving
	‘Spot the Hazard’ sheet	Information giving
	Practical Demo	Information giving
	Presentation by Teacher	Information giving
	Presentation by Experts	Information giving
	Video	Information giving
<i>Skills Based</i> , Practical or group work methods (bottom-up)	Learning-by-doing	Practical Skills, Life Skills
	Group Discussion	Decision Making, Life Skills
	Instruction Integrated with Activity	Information giving, Rule enforcement
	Informal Risk Assessment	Life Skills
	Role-Play	Decision Making, Life Skills
	Using PPE	Regulatory Compliance
	Rule Following	Life Skills, Regulatory Compliance

Table 2: Risk Education Methods

The basic classification that outlined in Table 3 relates (with slight variations) to typologies identified by education theorists (e.g. Hagquist & Bengt 1997; Tones & Tilford 1994).

The literature in this area provides a range of categories, which in general terms can be defined as ‘top-down’ (knowledge-based) or ‘bottom-up’ (skills-based). Top-down approaches are characterised by the dissemination of knowledge, providing passive recipients with information upon which they should base their decision-making. Bottom-up approaches are characterised as, within this context, pupil-centred, aiming to empower individuals to make their own decisions, and manage risks through their own capabilities.

Both the knowledge- and skills -based approaches to education have been criticised on a number of grounds. For example, respondents in the current study indicated that, in many circumstances, the provision of risk information alone is insufficient in itself to foster behavioural change. This is reinforced by contemporary research findings. Similarly, life skills approaches are considered to place too much emphasis on the individual and rational models of decision-making, tending to overlook the degree of variability present within individuals’ decision-making across different contexts; and neglect the influence of social influence and other concomitant factors on human behaviour (Hansen 1992).

To overcome these and related problems, the most prudent approach might be to adopt a number of complementary methods when addressing risk issues with young people. Although teachers do not appear to be conscious of the relative strengths and weaknesses of alternative approaches, they do, perhaps intuitively, adopt a number of approaches and thereby avoid being reliant on single approach.

The treatment of methods as discrete is, as in many other instances, somewhat artificial, and a degree of overlap is frequently present. In a school context, knowledge- and skills-based methods are likely to be nested. And for good reason: in practical learning contexts the success of skills based approaches will be dependent on some level of information giving (and vice-versa); all methods have some relative merit. In instances where teaching staff formally plan risk education syllabus they seem to select approaches depending on their preferences and experience, the availability of resources, the availability of time and the nature of the task, etc. The most appropriate method is likely to depend on the curriculum subject and the topics that are being addressed.

5 RISK EDUCATION AND VARIATIONS BETWEEN SUBJECTS, SCHOOLS AND KEY STAGES

As the range of teaching methods have already been described, the following discussion focuses upon evidence surrounding the application of those methods, by whom, and in what circumstances.

5.1 VARIATIONS BETWEEN SCHOOLS & TEACHERS

During one-to-one interviews respondents discussed risk education at some length, subsequently we were able to detect variations between their approaches and attitudes⁷. For example, teaching staff identified various strategies for educating pupils about the risks associated with certain activities. Whereas a number of teachers indicated that they would adopt an authoritarian approach to rule fixing and enforcement, others referred to methods that involved the pupils setting their own goals for behaviour and the adoption of an achievement orientation. Where alternative approaches are adopted it is likely that the learning outcomes will be subtly different. It seems likely that apparent differences reflect intrinsic differences in teaching style rather than being a product of the subject matter per se.

A further reason for variation may relate directly to the quality of teaching provided. Quality can relate to the relative experience of the teacher and his or her ability to educate particular groups of pupils. It seems inevitable that there will be variations in abilities to educate pupils. Similarly, there will be differences in learning outcomes that relate to the abilities of teachers to tackle risk education topics.

On a day-to-day basis, schools are directly responsible for interpreting the respective National Curricula and delivering a school curriculum that is relevant to their particular context. Therefore, another potential source of variability will relate to the teacher's selection of subject topics. However, given that topics are selected as a means of meeting the National Curriculum and assessment requirements, it can be assumed that the range of techniques, skills and knowledge that pupils are taught will be of a similar nature. Furthermore, it appears that health and safety regulations and the teachers' duty of care do ensure that topics are taught in a safe manner, and that at some level opportunities for learning about risk and risk control are provided.

Learning outcomes can also relate to the composition of each class or school. Pupils inevitably vary in their abilities and behaviour. And at a more general level, the success of education programmes will directly relate to the social processes in which they are embedded.

5.2 VARIATIONS BETWEEN SUBJECT AREAS

Many of the risks that pupils face are referenced to specific to contexts / environments. In most cases relevant hazards can be identified in the environment that the lessons are conducted. However, for a number of topics (notably PSE subject topics) the risks at issue relate to a range of contexts many of which lie beyond the school environment. In addition, there are temporal distinctions between risk education topics: i.e. there are curriculum topics that are firmly linked with immediate risks; and there are topics for which risks are emergent. Immediate risks relate to, for example, the use of hand tools and threats of violence. The non-immediate (or emergent) risks relate to, for example, poor diet, alcohol consumption, environmental pollution and

⁷ Similarly, LEA health and safety officers indicated that health and safety and pupil focused risk education initiatives within schools is variable.

hygiene standards⁸. In each case methods of risk education will have to be adapted to the type of risk.

Where it is practically possible, respondents stated that they prefer that pupils are provided the opportunity to learn first-hand about the execution of activities – and, therefore, directly about the management of risks. As mentioned above, teachers demonstrated a preference for learning-by-doing tasks, through which pupils can become sensitised to the construction of risk (e.g. when cutting or sawing). Where it is not practically possible for pupils to experience real world risks in the classroom – this generally applies to other environment and emergent risks - teachers resort to a number of other approaches, including teaching demonstrations, videos and role-play exercises.

Only a small number of the teachers indicated that topics were selected because they were principally focused on health, safety or welfare issues. In the main these respondents were from PSE and ‘Home Economics’ (or their national equivalents) subjects, wherein topics were most likely to include clearly defined health, safety and welfare issues. Teachers for these subjects were able to discuss their respective National Curriculum and its relationship to specific risk education lessons or topics. In particular, the PSE specialist staff spontaneously indicated the prominence of health, safety and welfare issues in their subject area. For other subjects, the health, safety and welfare issues were mostly treated as a sub-topic that permeates the lesson, but rarely constitutes the main motivation for the lesson.

Teachers from all subjects drew on the range of risk education approaches. The knowledge-based and skills-based approaches (see section 4.2) to risk education appear to be drawn upon, in varying degrees, within all relevant subjects.

As mentioned above, there was little evidence of a co-ordinated risk education input across curriculum subjects. Nevertheless, the co-ordinated structure of the National Curricula documents would suggest that some degree of overlap between subjects (e.g. health education within biology, home economics and PE) would be inevitable, whether planned or not.

In the following sections we discuss key points that were raised, or became apparent, from the analysis of the transcript data, in relation to the six subject areas of the National Curricula where there is a duty to address risk issues.

5.2.1 Art & Design

For the most part, Art and design teachers indicated that they did not believe that their subject area raises any noteworthy issues for risk education. These sentiments can be captured as follows:

“we don’t really use materials that are in themselves sort of hazardous really, I mean other than say powder paint if it sort of spills and the dust goes all over the place, you know.... They use sharp tools, there’s not much more than that.”

The skills and knowledge that pupils require to carryout activities are similar to those for D&T and Science (e.g. the use of hand-tools and hazardous substances). Most lessons will begin with teacher demonstrations and be followed-up with practical activities.

⁸ There are some activities that appear to straddle this divide. For simplicity, most activities or topics can be distinguished using these categories.

5.2.2 Design & Technology

The risks for Design and Technology subjects appear to be well understood. Given that these lessons involve significantly higher risks than for most other subjects, the number of pupils in each lesson is restricted in size at the secondary level.

D&T encompasses a range of sub-disciplines (e.g. ‘wood-work’ and ‘home economics’). The topics for each are noticeably different and provide a range of opportunities for learning about task-related risks and the development of practical skills.

Home economics has a strong focus on health and hygiene and has potential links with biology, PE and PSE. Craft and design subjects introduce pupils to various tools and making activities. The teachers indicated that safety design principles were more likely to be covered by topics for the sixteen and over age groups.

5.2.3 Information and Communication Technology

The teachers for this subject indicated that risk education was low on their agendas. An induction course for computer usage often includes a safety topic consisting of warnings about the risk of electric shock from computer equipment. Workstation ergonomics and internet safety⁹ do not appear to be covered in most cases:

“We don’t have schemes of work specifically on health and safety, no because that’s not really covered in the curriculum, so to speak. ... Basically we instruct them obviously you never touch anything at the back of the computer, you never play with any of the sockets, etc. You do not handle the machines in any way except for using the keyboard and the mouse essentially.”

Indeed, there are fewer National Curriculum risk education requirements for IT when compared to the other subjects covered in this report.

One school included ‘Business Studies’ under the IT umbrella, and identified syllabus content about regulations for ‘health and safety at work’ for the 11 to 13 year old age group.

5.2.4 Personal and Social Education (including Citizenship, etc)

The curriculum for PSE is distinct from other subjects in that the risk issues addressed rarely relate to hazards within the classroom context. Hence, risk issues are mostly dealt with in the abstract. The curriculum topics for PSE often relate to pressing social problems (e.g. bullying, drug addiction, crime and pollution). The PSE curriculum is specifically intended to develop pupil’s life skills (e.g. communication and decision-making capabilities), and often employ role-plays, case studies and group discussion approaches to education.

In general respondents recognized that PSE subjects are going through an evolutionary phase, and that they are receiving greater attention and more prominence within the curriculum. The time allocation for these subjects is expected to increase and teachers indicated that over recent years a greater number of specialist PSE teachers were being employed. Although the situation appears to be improving, non-specialist teachers are routinely required to conduct PSE lessons during tutorial times. A number of teachers felt that until specialist teachers are employed to take this curriculum forward, the quality of PSE lessons will be at sub-optimal standard (see section 6.4 below).

⁹ Internet safety was more likely to be mentioned by PSE subject specialists. These interviews were conducted before the recent abundance of media attention concerning child safety on the Internet.

Given the array of possible topics for this subject, teachers often source curriculum input from a range of out-of-school experts / guest presenters. The Police Force provides most frequent support, but it was reported that a number of other expert representatives are active in the delivery of the PSE curriculum (e.g. see Appendix 3). Material teaching resources (e.g. brochures, and topic sheets) were also highly valued by PSE teachers.

5.2.5 Physical Education

The PE curriculum is based on a range of activities, the majority of which, it is probably true to say reflect some element of risk. The subject offers significant scope for providing pupils with an opportunity to learn about the role and nature of risk in physical activities. Those PE teachers interviewed, however, did not feel that risk and safety education should be treated as a stand-alone subject, rather these topics should be addressed through integratoin with relevant practical activities. As with most other subjects, risk education in PE constitutes an informal curriculum.

The curriculum for health education also permeates PE lessons. The link between physical activity and health has become a major agenda and is increasingly reinforced through the primary and secondary PE curriculum (Green & Thurston 2002). Although specific health education programmes were not usually taught in a formal manner, pupils are sometimes expected to record 'personal exercise plans' or complete 'health and fitness' components through examination. In general, health education is taught informally, for example, when promoting exercise as a healthy alternative to other trends in youth culture, e.g.:

Interviewer: Right, I'm sure. How about health issues?

Respondent: *A massive agenda for us [PE]. I mean, health is a massive agenda everywhere in the country at the minute, and we are trying to drive it you know. Constantly reaffirming that to the kids, that time for computers may be, and these Sega Mega drives whatever they are, and X boxes [video games]. They need to do something active. We are constantly drilling home that 3 times 20 minutes exercise a week in your training is important.*

5.2.6 Science

When compared to DT, the science activities provide similar opportunities for learning about task-related risks and the development practical risk control skills. Science courses for secondary schools begin with a safety induction course that introduces the pupils to the laboratory context and the hazards within that environment. Beyond the induction course, risk education instruction is taught informally, as and when the need arises. On the whole, science teachers indicated that they are highly aware of safety issues within the laboratory context, and that regulatory requirements are carefully observed. Science teachers appeared to be highly conscious of an apparent cross-over between regulatory requirements and risk education implications.

5.3 VARIATIONS BETWEEN AGE GROUPS

In the primary and secondary context many of the lesson related hazards are removed and activities are constructed around the teacher's own assessment of risk for specific activities¹⁰:

¹⁰ Teachers will also take their lead from arrange of other sources, e.g. colleagues, health and safety regulations and LEA guidance.

“No matter how many precautions you take you are still dealing with 8, 9, 10 year old children who sometimes don’t have any fear! But also, don’t have any concept of what danger is until it happens for the first time. You try to prevent any risks, you look at the lesson and think, ‘is that risky?’, and if it is, ‘what can I do to reduce that risk?’, or, ‘is that risk so small that it’s worth taking?’, and if it’s not then you just abandon the lesson and try to do something else really”.

There are clear differences in competency levels of primary and secondary age groups. Nevertheless, the aptness of education programmes does not depend solely on age as such, but on the pupil’s stage of development. Not much can be said about the criteria for judging pupil’s levels of competence and the type of activities they should adopt. Justifying the use of risk will tend to relate to a range of factors. Teachers make related decisions in the context of lessons or lesson planning. When in doubt they will draw upon guidance publications, or the knowledge of more experienced colleagues. Overall, tailoring approaches and material on risk in line with pupil ability were not reported to present any unique problems for teaching staff. Respondents felt that they were aware of pupil’s cognitive and physical capabilities, and would not place them in situations where they were not able to understand or manage risks.

For most entry-level pupils, at secondary schools, it will be their first time in a laboratory or workshop. To prepare them for the activities that lie ahead special induction lessons are prepared. The safety rules that apply to the laboratory environment will be outlined, e.g. information is routinely provided about the type of activities and equipment, and potential hazards will be discussed.

As a general rule, school learning activities are based on a spiral curriculum and the progression from one level to the next is expected to be gradual. The step-by-step progress of the National Curricula is intended to provide a smooth ride for pupils. On the one hand, the spiral curriculum is purported to relate to natural stages of development (McWhirter 1997, p.2); on the other, development stage will relate to the experiences to which individuals previously had access, a significant component of which is their on-going school education experience.

Published schemes of work and lesson plans (from curriculum authorities, examination boards and education publishers, etc.) provide fairly clear indications of the necessary pupil competencies which should be achieved at each key stage (or age group). In the case of risk education, there is often less guidance in this respect (although see DfES 2001). Risk education programmes and the topics addressed need to be sensitive to the child’s cognitive development (not necessarily their age), and we feel that guidance on this matter, based upon contemporary understandings, could only be provisional. As mentioned above, justifying the use of risk in a learning exercise will relate to a range of factors, age and development stage will be amongst them.

6 BARRIERS TO RISK EDUCATION

Teachers indicated that ensuring the safety of the pupils is of paramount concern. As a general rule, teaching staff and teaching appear highly committed to ensuring that pupils are working in a safe environment and provided with the appropriate knowledge and instructions for carrying out risk related tasks. Furthermore, they are taught broad social skills for controlling risk. Nevertheless, there appear to be a number of barriers to the teaching of health, safety and risk education. In this section we have concentrated our discussion on the teaching staff perspectives and attributions over the barriers to risk education.

6.1 SCHOOL INFRASTRUCTURE AND FUNDING

Lack of resources for maintaining classrooms and equipment was cited as a possible restriction to the provision of risk education. In a few cases, activities that provide opportunities for learning about risk and risk control are removed from the school syllabus because either the equipment or school infrastructure is not maintained to a level that could ensure that activities are conducted in a safe manner:

“I’ve got a lab upstairs and the floor is not even, there’s little holes here and there where kids have banged stools. I’m thinking to myself, really I shouldn’t really be doing any practical work here because if a kid trips up with some acid in their hands...”

6.2 THE DEMANDS OF THE NATIONAL CURRICULUM

Although the demands of the National Curricula are widely reported as being a significant obstacle to the inclusion of new topics (see e.g. Thomas et al 2000), none of the teachers interviewed indicated that this constituted an obstacle to risk education. It was widely held that risk education is sufficiently covered, albeit in an informal, integrated manner. However, the demands of the National Curricula were considered to present a barrier if teaching staff were to be expected to introduce formal, dedicated risk education lessons.

6.3 THE RESTRICTIONS PLACED ON LEARNING OPPORTUNITIES THROUGH REGULATIONS AND SAFETY CONCERNS

A number of commentators have indicated that there is a trend towards risk aversion in society. In turn this has focused attention on many local or immediate activities which people feel the need to control (Adams 1995; Nichols 2000). One outcome has been an increase in regulatory controls for some subject related activities. It is perhaps ironic that a number of subject activities, through which pupils have greatest opportunities to learn about risks and risk control, are being removed because they are considered to be too risky. A number of respondents provided details of activities that have been removed in order to prevent risk in cases where, given appropriate controls, they felt there were justifications for the use of risk, e.g. unsupervised cross-country runs and certain laboratory experiments.

6.4 SPECIFIC ISSUES FOR PSE

In a few circumstances, normally during tutorial periods, non-specialist PSE teachers are expected to deliver the curriculum for PSE subjects. In these circumstances teachers can find themselves providing tuition on subject matter for which they may not be qualified to deliver the subject matter. In those schools where such problems were said to exist, it was reported that more time and resources were being allocated to achieve the satisfactory delivery of this aspect of the curriculum:

“At the moment PSE in this school is getting a bit of an overhaul. That’s why the changes are happening, because in the past one person ran the department and she was the only PSE expert. And so what happened was non-expert teachers were teaching PSE. They didn’t feel comfortable with it, so the scheme of work was basically a big pile of work sheets, and this is what the school’s been running on. I ... put in place a proper department. So what we are doing now is we are trying to change the schemes of work to fit more in with what’s needed today.”

An additional problem for PSE subjects is that the delivery of risk education topics will depend on the moral or political priorities of the school or teacher. For example, Roman Catholic schools may not provide education on the risks of unprotected sex, topics that would be included in schools of other religious denominations. Similar barriers can relate to individual’s topic preference.

The delivery of PSE education also depends in some part upon the availability of out-of-school experts to provide specific insights to pupils. Their availability and the consequent level of provision is likely to vary between schools. These combined issues for PSE subject (and to varying degrees for other subjects) can result in uneven outcomes in education provision.

6.5 LEVELS OF TECHNICAL KNOWLEDGE

Some commentators might argue that the teachers’ lay perceptions of risk control stand as a potential barrier to the provision of a formal risk education. If teachers are to be expected to deliver a risk education curriculum, there remains much to be learned about the best methods of delivery and training provision for teaching staff.

One area where respondents acknowledged possible deficits in their knowledge was in the primary school sector. Given that most primary school teachers are required to deliver the range of curriculum subjects to year groups, they will for the most part be delivering subject curricula for which they are not trained specialists. In these circumstances colleagues can provide the necessary support, but when faced with classroom contingencies it is possible that learning experience may be less than optimal:

“[non-specialist primary level PE teachers] think they should put the [equipment] out ready for the children because they don’t want any accidents. And that’s a real barrier to get across because what they should be doing is teaching the children how to handle the equipment safely and put it out themselves”.

“But really with gymnastics it’s just something that a teacher is expected to teach - often without training. It’s just like other areas, you know, you put me with DT equipment, I’d be nervous because I’d be thinking how do you saw or cut safely. It’s things like that, if you are not a specialist in that area, you’re often reluctant to have a go.”

6.6 PUPIL BEHAVIOUR & ATTITUDES

The most widely reported barrier to risk education cited related to pupil misbehaviour during lessons. Misbehaviour is likely to have an impact on all aspects of education as it directly

disrupts the flow of a lesson and learning outcomes. It was also suggested that misbehaviour was the most likely cause of classroom accidents¹¹.

For risk education there are a range of potential barriers that relate directly to pupils' risk taking behaviour. For example, a number of teachers indicated that notable variability exists between pupils when it comes to learning rules or principles and regurgitating them for the purposes of examinations. Also, a number of respondents reported being less convinced that learned risk principles hold any relevance beyond a context of learning environment. This reinforces findings from the risk literature which highlight the salience of context (see Tones and Tilford 1994). It was also commented, that in many cases rules are assimilated with ease, but there are other cases where pupils demonstrate less certainty or understanding:

“They can answer all the questions on healthy eating then they will go and have chips at lunchtime everyday just because they know it doesn't harm to do it. And that's actually a huge problem with education – like crossing the road, they will still jaywalk. We still keep on at them, they still keep doing it. ... Whether or not they'll see in the long run it's for their own sake, I'm not sure. And this business, it carries on into their adult life.”

The balance of risk research evidence suggests that education gains that stem from risk education programmes may not be realised through immediate behavioural changes. However, this does not necessarily represent a straight-forward failing in risk communication, rather it may simply reflect a clash with existing beliefs that have been learned elsewhere and are which are already firmly established. There are many barriers to risk education programmes, not least the influences that come through peer and family interactions. At least some teachers recognise that there are many antecedents to behaviour, risk education being but one:

“the fact that children are not allowed to wear earrings for swimming and that is really the biggest barrier that I have come up against, because parents insist that they wear their earrings and there are several reasons that the authorities insist that they don't. ... But I think the barriers, not with the pupils themselves, but parental input or what parents say to them: ‘you are not to take that off’. So they've got a chain: ‘I'm not allowed to take this chain off, Miss Smith’ – ‘Why’ – ‘Because my Mum says’. If you take it off you know the parents are going to come in. ... You say this is what we expect them to wear and they [parents] send them in with something that is totally inappropriate”.

In addition pupils may demonstrate preferences for particular types of subject matter:

“Yes sometimes in the past we have run [D&T] projects that are directly linked to safety, such as being seen at night and things. ... But they didn't really like it. Just because it's not sort of cool. That's what I mean about choosing projects. Again you could say right now I want you to consider safety for the next 10 weeks and design this, that and the other, but they wouldn't enjoy doing that, and it has to be worked-in, in more subtle ways”.

¹¹ Although a number of teachers reported that pupil behaviour had become worse in recent years, perceptions may be directly related to the increase in pressures to improve performance.

7 DISCUSSION

7.1 LESSON PLANNING

The introduction of the National Curricula marked an essentially managerial attempt to remove some of the variation in teaching practice and provide a structured ‘top-down’ approach to curriculum design. Initial fears that the introduction of a new codified system of teaching and learning would act as a straightjacket for teaching practice appear to have dissipated (Elliot 2000), and there is now a widespread understanding that the National Curricula provide guidance with flexibility. The National Curricula do, however, provide some measure of constraint due to the broad scope and quantity of objectives.

At the strategic level school curriculum planning is associated with termly plans and weekly schemes of work. These are, in most cases, based upon the National Curriculum requirements. There is much scope for interpretation and adaptability when creating local plans and the school curriculum. Teachers understand the National Curriculum as a series of broad learning objectives that require conversion into practical tasks. Through the teacher’s selection of learning points a variety of classroom activities and associated learning outcomes are to be expected, i.e. there are variable patterns of implementation at the level of educational *topics* and *tasks*.

A review of curriculum guidance resources found that risk education has a relatively high visibility within the National Curricula guidelines (Shearn & Weyman 2003a). Given that there are diverse ways that stakeholders interpret policy documents, it can be assumed that teaching objectives contained in those documents can be addressed in a range of ways, and when objectives are implemented, it can be on the basis of any number of motivating factors. Although teachers from the seven schools indicated that they draw on guidance materials in one form or another, they did not always recognise that within those resources that suggestions or requirements for risk education exist. In short, levels of awareness and understanding of the GTR and other risk education requirements were low and in many instances effectively absent.

The interviews provided a valuable insight into teacher’s interpretation of risk education requirements. During interviews the teachers were presented with details of current requirements. The teachers associated these requirements with health and safety regulations. From their point of view these regulations already place controls upon teaching practice, they did not consider that the curricula risk education requirements, whether known or otherwise, would change teaching practice to any significant extent. When conducting lessons, they would educate pupils, as a matter of course, about any task related hazards, risks and procedures for risk control. Many of the teachers indicated that they were already motivated, for a variety of reasons, to provide risk education for pupils.

The flexibility of the National Curricula suggests that there is scope for a pro-active approach to the inclusion of topics with risk education as the principal focus. However, only one (non-PSE) respondent from the case studies mentioned that they had purposefully introduced topic-based work, wherein risk education was a principal focus. The curricula for PSE subjects are notable exceptions, as many of the topics relate directly to health, safety and welfare issues.

On the basis of respondent’s comments about risk education content of curriculum guidance documents, it is apparent that there are no standard patterns that could describe the influence of guidance materials on lesson plans. Specifically, there is little evidence that schools or their departments prioritise or rationally plan the inclusion of curriculum requirements for risk education. *The indications are that in most instances the risk education aspects of lesson*

content is not part of risk education plan, but generated as an outcome of 'real-time' considerations during the execution of a lesson, at the point of delivery.

There are a number of ways that curricula guidance can shape lesson content, but overall guidance should be seen as part of a complex web of factors that impact upon learning outcomes. For example, the teacher will approach the curriculum objectives in relation to available knowledge, skills, resources and pupils' interests, backgrounds, attitudes and abilities. Indeed, each National Curriculum encourages schools to adapt lessons in relation to the availability of local skills, interests and resources.

Respondents did not demonstrate any systematic approach to the use of risk education resources. In most cases they would seek out information as and when it is required.

Most teachers accept that schools are partially responsible for carrying pupils' risk education forward. However, from the evidence of the sample of interviews, it can be concluded that risk education is rarely driven by any co-ordinated policy or plan, or by any individual. We anticipate that problems will arise if it is assumed that everyone is responsible for taking risk education forward, it soon becomes no one's responsibility. A formal risk education strategy is most likely to be advanced if an individual (e.g. a senior member of staff) has dedicated responsibility for outlining a school policy for risk education (e.g. through a school/department health and safety policy). It would however, be desirable for this individual to include other stakeholders in the policy development process. Optimum outcomes would be reached if the policy were supported through INSET training and co-ordinated across relevant subjects. This would place the emphasis on a school centred approach to risk education.

7.2 TEACHER'S APPROACH TO RISK EDUCATION

Through the interview process teaching staff provided a rich insight into their understanding of risk education and provided detailed anecdotal descriptions of their approaches to teaching risk issues. When asked to describe their approaches to risk education the majority of teaching staff identified that there are two prominent methods that they employ: 1) Teachers (especially for Art, D&T, IT, PE, and Science subjects) identified formal introductory or preparatory risk education sessions employing, for example, videos, 'spot the hazard' sheets and classroom demonstrations to convey risk messages; 2) Teachers also identified skills based education, utilising practical tasks, group discussion, or role playing exercises. Based on these insights we provided an overview of their approaches to risk education, which we classified as either knowledge- or skills-based. It should be noted, however, that this is an approximate interpretation to the teaching methods adopted as there is often a degree of overlap between approaches. In contrast to these formal methods, respondents identified a significant array of classroom experiences which might be construed to constitute risk education. Much of this is delivered by informal means, as and when it is required, during the course of a lesson. The methods associated with these aspects of a lesson are wide ranging, but often involve reinforcing earlier instructions. In this respect, risk education, for the most part, is perhaps a hidden curriculum - though an essential component, it tends to permeate a lesson rather than constitute a specific or formally planned component.

A teacher's selection of risk education methods is an outcome of their understanding of risk education and its role within a lesson or module. On the whole, teachers considered that formal risk education components were hardly ever required. This was most clearly demonstrated when they were asked to discuss potential ways for developing the formal risk education content of lessons. *Most teaching staff responded that risk education was sufficiently covered through less formal methods and that it could not feature beyond a few minutes during any lesson.* Respondents also maintained that their efforts to educate pupils about risks and risk control -

although (for the most part) informal and unplanned - are adequate and appropriate. As one might expect, respondents feel that they are well equipped to impart knowledge to their pupils. Indeed, it might reasonably be presumed, teachers will be aware of (subject related) risks that pupils face. And they will adapt lessons according to various mitigating factors, safety being one of these. Above all, these approaches comprise of the control of undesirable risks, applying suitable controls (e.g. using PPE), and outlining to pupils the task specific risks and measures for controlling risk. In many instances teachers' approaches to risk education appear to be based upon functionally sufficient methods for achieving adequate risk controls/education during the flow of a lesson. The risk education content of a lesson is, in summary, primarily focused on what is *immediately* necessary to conduct the lesson in a safe and appropriate manner.

Our general assessment of the teachers' approach to risk education is summarised in the following points:

- teachers employ a range of risk education methods (as outlined above, see section 4.2);
- teachers demonstrate rather limited imagination or innovation in their approaches to risk education – much instruction appears to be based on clearly defined 'do's' and 'don'ts';
- when implemented formally, teachers often consider risk education to be something that is presented at the start of a lesson or module, that requires pupils to follow rules or examples (this typically comprises a small proportion of a lesson or module);
- for the most part, risk education is rarely planned, but addressed on an ad hoc basis as issues arise, e.g. risk education is provided in response to a need to manage pupil behaviour;
- teachers rarely adopt topics that have health, safety and risk issues as a principal focus;
- teachers' risk education approaches do not appear to be based on any given insight into effective risk communication – most teachers cited 'common-sense' as the basis of their approach;
- there appears to be much overlap between risk education and risk management in teacher's conceptions of and approaches to risk education (e.g. information and warnings about risks), .
- teaching staff would benefit from further, subject / topic specific guidance on risk concepts and their delivery.

7.2.1 Communicating Risk Education to the Educators

With the aim of shaping the nature and extent of risk education, guidance on this topic has been provided by the Department for Education and Skills (i.e. DfES 2001 – *Safety Education: guidance for schools*)¹² and the National Curriculum authorities for England, Scotland and Wales. These documents (with particular reference to DfES 2001) identify that risk education can be approached formally and can constitute a significant element of a lesson; that risk can be dealt with in the abstract through, for example, mathematical representations and risk probabilities; that risk assessment skills are generic and transferable from one context to the next, and; that risk education is a cross curricular theme. In summary, these guidance documents, aimed at teaching staff, identify principles and methods for educating pupils about hazards, risk and risk control. They go some way to providing 'recipes' for good practice in risk education.

From the evidence gathered it would appear that teachers' approaches to risk education are in notable contrast to the approaches advocated within a number of current education guidance documents. Whereas the greater part of risk education appears to be informal, aimed at tackling

¹² This guidance document is provided as support for PSHE and Citizenship subjects of the English National Curriculum, though there are a number of references to other subjects. The guidance document would plausibly be of equal value to Scottish and Welsh teaching staff for related subjects.

immediate education concerns (e.g. safety within the classroom) and void of any specific long-term strategy for knowledge gain and skills acquisition, the available guidance promotes the use of formal methods for educating pupils about risk control and emphasise the generation of life-long and transferable skills.

The guidance is underpinned by a range of assumptions which might not be intuitively apparent to teaching staff and may constitute significant departures from current risk education practices, were the recommendations to be implemented. With a view to understanding these differences insights borrowed from the risk communication literature may be of some value in this context. Risk communication research has for some time reported that a gap often exists between expert and lay understanding of risks (e.g. Slovic et al 1982). Whereas experts have a preference for technical information and technical approaches to risk control (e.g. risk probabilities), lay people are more likely to use direct experience to inform judgements. Research has since moved on from this initial position and we are beginning to understand the subtle differences between individuals when they make decisions about risks (see Pidgeon et al, 1992; and Weyman & Kelly 1999).

These insights have some connection with the findings from this study. In particular, there appears to be a gap between expert recommendations for risk education and the lay approaches adopted by teachers. Teachers' understanding of risk education appears to diverge from the expert's technical conceptualisations of risk communication. For the most part, their approaches to risk education are based on contextual understanding of what is relevant at any given time and place. The insights from the risk communication literature suggest a number of ways forward. When communicating risk issues to lay audiences it is reported that positive outcomes can be achieved if a less technical language is used and where risk assessments are promoted as, and designed as, useful adaptations of individual's existing risk management and risk education skills (Jasanoff 1993). Rather than attempting to fill this apparent 'gap', by encouraging teachers to align their current practices with those advocated by the expert, it is important to seek ways of engaging teachers, by paying recognition to the practicalities and realities which typify the school environment whilst drawing on insights into their current understandings.

Furthermore, the findings from this research indicate that teachers do not freely associate with risk concepts (hazard, risk and risk control). On the whole, teachers' discourse included 'safety education' and 'health education', and they were more likely to talk of 'safety in the classroom' than risk or risk control. Although the DfES 'Safety Education' guidance document is an interesting and potentially valuable resource, it is likely that much of the language within the document may be too technical for a non-expert audience. Very few teachers freely associate their work with the teaching of risk concepts.

If the HSE's policy objectives of improving the coverage of 'risk education' for young people are to be fulfilled, drawing upon insight into current teaching practices will be of significant importance. Any attempts to engage teachers in risk education may generate positive outcomes if recommendations are partially shaped by the teacher's own extant knowledge and conceptions of risk education¹³. Rather than present risk education as a new curriculum, teachers should be encouraged to recognise the value of their existing (formal and informal) approaches to risk communication, and to build upon their existing skills of risk management and risk education.

A useful starting point might be to encourage the adoption of a greater number of risk education topics within the school curriculum. Clearly health and safety requirements detailed in the

¹³ It will also be important to address the broad understandings of the pupils.

National Curricula documents are a step in this direction. From the evidence of this research teachers have not generally taken up the challenge of these requirements. It is anticipated that one way of advancing the implementation of risk education components would be the provision of a range of well-designed teaching modules that fit into existing schemes of work, for each key stage. Rather than provide documents that include abstract discussions about best practice in risk communication (e.g DfES 2001), guidance should be based on clearly defined tasks and activities. Information should also be provided about curriculum objectives, learning points, and teaching methods. The main focus would be tasks for teachers and pupils to undertake.

As discussed elsewhere (Shearn & Weyman 2003a), given the nature of risk learning we feel that education through topics - particularly practical topics or role-playing scenarios - is likely to constitute an effective way to sensitise pupils to the construction of risk during activities and 'real-world' situations. Where possible, it is best to avoid introducing pupils to abstract risk concepts, or codes of conduct, as there is no established basis for assuming that pupils will readily 'activate' such knowledge to other phenomena in a generalised manner in real-world settings. Furthermore, idealised or generic concepts often create tensions, and promote confusion, rather than clarity, unless they are firmly linked with specific risk taking activities (this will be true for both teachers and pupils). Teachers should be encouraged to adopt appropriate methods for addressing risk education; these include learning through case studies, vignettes and practical activities. The most appropriate method is likely to depend on the curriculum subject, the topics that are being addressed and the developmental stage of the target audience.

Encouraging schools to increase the amount of risk education in their curriculum and the creation of linkages with other initiatives can be seen as desirable, but in many ways depends upon the adoption of a whole school approach to risk education. From the evidence gathered during this study, there is very little in the way of strategic thinking within schools on this topic. As outlined by Pawson and Myhill (2001, p.44), such schemes do not need to be grandiose, but should start at the classroom or task level and aim to build outwards:

'The simplest road safety instruction is deepened when taken out onto the 'mock' road, toughened when tested on real roads, anchored when it involves parents supervising the school walk, broadened when it seeks to combine other goals such as improved fitness levels and air quality, strengthened when it is supported by traffic management regulation from the local authority, invigorated when supplied with oxygen of imitation and mass media support, and authenticated when the evaluator discovers the combination of subjects and circumstances to harness such a process'.

There are a number of potential sticking points for the promotion of a formal risk education curriculum in school contexts. Given the busy schedules that teachers appear to have, it is unlikely that teachers would be able to find time for advancing their knowledge on this new subject matter. In-service-training (INSET) provision is one potential mechanism for introducing teachers to new skills and topics. However, for teachers to be engaged in training or the provision of a formal curriculum for risk education, they would need to be convinced that this would constitute a qualitative improvement over current provision. Evidence from this research suggests that teachers feel that they are adequately managing their duty as risk educator. Their approaches do not neatly align with the technical prescriptions in guidance documents, and their approaches may not always be part of a formal curriculum, but as indicated in a number of the quotations above, their perception seems to be that they believe they are covering most of the salient features, and educating pupils in appropriate ways – e.g. many respondents indicated informal risk assessment skills are embedded within existing practices.

7.3 ADDITIONAL ISSUES IN RISK EDUCATION

7.3.1 Reasons for Variability in Risk Education Provision

During the interviews, notable differences between teachers, their attitudes and their approaches to risk education were detected. The main differences between teachers related directly to their subject specialism. IT teachers were less inclined to recognise the hazards in their subject areas. The PSE and 'Home economics' teaching staff were most likely to introduce topics that include health, safety or welfare as a principal focus.

With respect to risk education, teachers demonstrated a preference for learning-by-doing tasks, through which pupils can become sensitised to the construction of risk (e.g. when cutting or sawing). Where it is not practically possible for pupils to experience real world risks in the classroom – this generally applies to non-classroom and emergent risks - teachers resort to a number of other approaches, including teaching demonstrations, videos and role-play exercises. This was most notable for PSE subjects.

The teacher is generally responsible for assessing and assigning those tasks pupils which are capable of conducting. The aptness of education programmes does not depend on age as such, but on the pupil's stage of development. Not much can be said about the criteria for judging pupil's levels of competence and the type of activities they should adopt. Justifying the use of risk will relate to a range of factors. Teachers make related decisions in the context of lessons or lesson planning.

7.3.2 Barriers to Risk Education

Teaching staff identified a number of barriers to risk education. For the most part overcoming the cited barriers to risk education would seem to require the injection of substantial resources to improve infrastructures and training provision; and would require the reversal of apparent attitudes toward risk aversion. It should be acknowledged that all risk education programmes face any number of barriers, they do not apply equally in all cases, and they cannot always be overcome.

In most cases, teachers feel that they are adequately managing risk education and communication (see related discussion in section 7.2). From the evidence provided it is clear that teachers are working hard at ensuring the health and safety of pupils and providing them with suitable instructions for controlling risks. With the exception of a number of predominantly PSE topics teachers understand risk education as something that should be integrated with existing lessons, and not constitute a stand-alone subject. In this respect their understanding and approach represents a potential barrier, as most teachers could not envisage providing formal risk education modules, or providing risk education for more than a few consecutive minutes during the course of a lesson.

In most cases the levels of awareness of the Curricular requirement for risk education teaching was low. Although teachers appeared to have a general awareness of requirements, these seemed to be shaped by statutory regulations for health and safety risk management. A further problem relates to the manner in which teachers utilise guidance materials and other resources. If formal guidance is provided for teaching staff (such as the GTR) then it will be interpreted subject to personal perceptions and a range of contextual considerations.

The success of any programme will depend on the level of attention paid to the potential barriers. Awareness of potential barriers should therefore shape the construction and

implementation of risk education programmes. And the people expected to carry programmes forward should be provided with advice on ways to overcome barriers.

7.4 FUTURE RISK EDUCATION INTERVENTIONS

Throughout this report we have provided insight into the teachers' approaches and understanding of risk education. In this final section, we outline the feedback that teachers provided when asked to discuss suitable risk education teaching resources or guidance. The suggestions were similar throughout. On the whole teachers provided stock answers and suggested education formats that they associate with health and safety (e.g. videos and posters). Compared to other subject teachers, PSE teachers appeared to be most interested in the provision of new risk education teaching materials. This might relate in part to the rapidly evolving nature of their subject area, and the principal focus on risk in many of the topics that they cover.

7.4.1 New Materials

Given that most people have viewed health and safety videos, and perhaps associate them with health and safety training, video formats were considered a useful means of demonstrating the harm that can result from hazardous activities. It was recommended that the video should relate to specific tools, activities, hazardous substances and, more generally, education topics, etc.

Worksheets, CD-ROMs, information sheets, posters and 'spot the hazard' sheets were also popular choices.

As a general rule, teachers indicated that the risk messages that videos and other information formats delivered need reinforcing. It is likely that information alone will not furnish pupils with the requisite degree of risk awareness, or skills in risk management and control. Worksheet exercises provide some value as a compliment to additional exercises that require the pupil to assess risks in the actual environment. Perhaps in view of this understanding, some teaching staff suggested that a range of discussion topics and a lesson planning material should accompany such products. This would potentially benefit teaching staff by removing the burden of planning additional lessons, it also provides external agencies with an opportunity to shape the content of the school lesson and outline guiding principles.

For the most part respondents did not show any enthusiasm for extended risk education activities, indicating that a video and brief discussion would often suffice. However, two teachers demonstrated some interest and provided suggestions for risk education lessons. One teacher mentioned a practical activity that his pupils carried out following a safety video:

"we did some role-playing and they had to go and look for suspect areas. 'What's wrong with this room?', 'where are the dangers?', you know. It might seem obvious but I think it's useful for all children to experience these things".

Another teacher mentioned the potential for a class or school based risk assessment exercise:

"if there's an annual risk assessment, making that public to the kids. You can pretend an item of equipment has to be taken away or something – because it's not being used properly. You could ask them, 'why?'. Have some sort of discussion around the issue at the beginning of the lesson one day. That I could see working. You could have a couple of people wandering around with clipboards or something, and white coats, just to make it look effective. It's that sort of thing that they'd remember, something slightly out of the ordinary, that's a one-off".

Although the provision of risk information is an important step, lessons that provide some additional stimulus for pupils, are widely perceived to be a positive way of progressing. For example, if the topic is road or water safety, the lesson plan should aim to move beyond the marking of road hazards on a web page or sheet of paper, and beyond the story associated with role-play. Visits to real roads, watercourses or swimming pools can provide important linkages with classroom messages. A number of commentators recommend that schools should go even further through involving the wider community, and particularly parents in the process (Pawson & Myhill 2001; Towner 1995). Additional support and reinforcement can be achieved if activities are linked to national initiatives and education programmes.

7.4.2 Improving Likelihood of Take-up

When asked about ways of improving the likelihood of take-up of risk education teaching resources, the following suggestions were provided:

- Resources should aim to be interesting to the pupils. However, it will be the teachers that make initial assessments of suitability and they effectively act as the gatekeepers of teaching resources.
- Resources, particularly videos, tend to get out-of-date very quickly. These considerations should be taken into account during the design stage. Alternatively, regular updates should be provided.
- Resources that provide something out of the ordinary, or employ a shock tactic, are well received by the pupils and improve chances of having a lasting impact.
- Resources should be sent directly to the head of department in secondary schools or to the head teacher in primary schools.
- Alternatively, resources should be distributed via the LEA.
- Resources might be of two types: 1) stand-alone risk education resources, or; 2) topic based resources with risk education as a principal focus. The later type are more commonly used within PSE subjects, although we feel that other subjects (especially D&T and Science) have the potential to deliver topic based risk education lessons.
- Resources should clearly specify the relationship with the National Curriculum and provide evidence of links to topics, milestones and subjects.
- Resources should be cheap, or preferably at zero cost.

8 MAIN FINDINGS

- At the strategic level within school curriculum planning is associated with termly plans and weekly schemes of work. These are, in most cases, based upon the National Curriculum requirements (in England and Wales and equivalent statutory arrangements in Scotland). Here there exists notable scope for interpretation and autonomy, hence, the realisation of National Curriculum objectives can be achieved by means of a variety of classroom activities and associated learning outcomes.
- Although teaching staff routinely draw on National Curriculum guidance materials it would appear that levels of awareness and understanding of the need to teach young people about risk assessment and control issues is low and in many instances effectively absent. Only one (non-PSE) respondent reported that they had introduced topic-based work where education in risk concepts constituted a primary focus.
- In the main teaching staff associate the need to address risk issues with the need to comply with health and safety Regulations. Indeed, approaches to risk education appear to be very much based upon the implementation of functionally sufficient methods for achieving adequate risk control within a lesson, e.g. use of PPE. The risk education content of a lesson is, in summary, primarily focused on what is *immediately* necessary to conduct the lesson in a safe and appropriate manner.
- In common with the wider population, the concepts of health and safety tend to be much more clearly understood by teaching staff than the more ephemeral concepts of hazard and risk. Classroom teachers' discourse tends to reflect the established concepts of 'safety education' and 'health education', and they were more likely to talk of 'safety in the classroom'.
- There was little evidence that schools or their departments have formal objectives for the delivering curriculum requirements which address risk education. Rather, the fulfilment of this requirement is devolved to classroom teaching staff. In the majority of instances, it seems that where such issues are addressed this tends to be on an ad hoc basis, referenced to hazards associated with lesson content, rather than reflecting a strategic approach to the delivery of risk concepts, per se.
- It is apparent that where teaching staff address risk issues this tends to take the form of:
 - 1) A formal introductory or preparatory risk education sessions employing, for example, videos, 'spot the hazard' sheets and classroom demonstrations to convey risk messages; (principally for Art; D&T and Science subjects).
 - 2) Skills based education, typically taking the form of practical tasks / demonstrations linked with group discussions, or role playing exercises.
- In contrast to these formal methods, it was claimed that the vast majority of what might be construed as risk education is conducted informally, on an ad hoc basis as and when it is required, during the course of a lesson. The methods cited here were wide ranging, but, it seems, frequently involve the reinforcement of earlier instruction. In this respect, the implicit claim is that risk education, for the most part, constitutes an embedded aspect of the curriculum, rather than constituting a specific or formally planned component.
- Teaching staff generally cited 'common sense' as the basis of their approaches to risk education.

- The majority of teaching staff indicated that they could not envisage teaching risk education topics or issues for more than a few consecutive minutes in any lesson.
- The approach to risk education adopted by the majority of teaching staff appears to be in notable contrast to the approaches advocated within a number of core education guidance documents (e.g. DfES 2001 – *Safety Education: guidance for schools*), i.e. rather than approaching risk issues through formalised methods aimed at imparting understanding about risk control with an emphasis upon transferable life skills, the approach adopted in most instances appears to be strategically lacking.
- Findings highlight the presence of notable differences between teachers, both with regard to their attitudes and approaches to risk education. These differences appeared to be related to their subject specialism, e.g. IT teachers appeared less inclined to recognise the hazards in their subject area, compared with other disciplines. By contrast, PSE and ‘Home economics’ teaching staff were more likely than members of other disciplines to introduce topics that included health, safety or welfare as a principal focus.

9 RECOMMENDATIONS

- There is a need for a co-ordinated policy on the coverage of risk education issues. To be effective this policy should be established within individual education establishments by senior staff, e.g. the head teacher or head of discipline. This should be backed upon by clear guidelines on provision from an external source, e.g. the LEA, possibly supported through INSET training and co-ordinated across relevant subjects. This approach would place the emphasis on a school centred approach to risk education.
- Teaching staff would benefit from clearer instruction on how to deliver risk concepts in education. The provision of teaching packages and schemes of work would help facilitate this, but would not in themselves overcome the problem of the lack of clarity over what is meant by risk concepts and risk management.
- Teachers should be encouraged to recognise the value of their existing (formal and informal) approaches to risk communication, and steps should be taken to build upon these skills in the provision of future advice, guidance and training in risk education.
- Where possible, guidance and training in risk concepts should aim to avoid the use of abstract risk concepts, or codes of conduct, as there is no reason to assume that they will be understood and communicated with any useful practical effects. Idealised or generic concepts often create tensions, and promote confusion, rather than clarity, unless they are firmly linked with specific risk taking activities. However, teachers should be encouraged to adopt appropriate methods for addressing risk education; these include learning through case studies, vignettes and practical activities. The most appropriate method is likely to depend on the curriculum subject and the topics that are being addressed.
- It is considered that a potentially effective way of advancing the implementation of risk education components would be through the provision of a range of well-designed teaching modules that fit into existing schemes of work, for each key stage. Rather than provide documents that include abstract discussions about best practice in risk communication, guidance should be based on clearly defined tasks and activities relevant to the subject area. Information should also be provided about curriculum objectives, learning points, and teaching methods. The main focus would be tasks for teachers and pupils to undertake.
- Given that many teaching staff appear confident that they are managing the deliver of risk concepts effectively, there is a need to bring the apparent shortfalls to their attention. In part this misplaced-confidence transparently reflects to the presence of ambiguity over the distinction between responsibilities for risk management and risk education.

10 APPENDICES

10.1 APPENDIX 1: INTERVIEW GUIDE

Introduction for interviewees

We would like to stress that *we are interested in the views of teaching staff – staff are not being assessed or tested in anyway.*

Young people and new workers face the highest risk of injury. The project aims to understand what is being done to educate young people about the issues that relate to their health, safety and well-being. For example, we would be interested in how you deal with making pupils aware of hazards in the science laboratory or the playground.

We are also interested in the structure of the National Curriculum, and ways that it shapes education content.

Little is known about the amount of health and safety education within schools. This research aims to establish what is being done and what assistance, if required, could be provided.

Interview Questions

1 Background information

a) What subjects do you teach, and how long have you been teaching?

b) How are lessons planned?

Prompts

What sources of guidance do you use (e.g. National Curriculum)?

What lead does the department/Curriculum Auth/LEA provide?

What lead does your department provide ?

2 Risk Education (general – especially for head teachers and citizenship)

a) Does the school participate in any local or national health & safety initiatives?

Prompts

How did you become aware of them?

Could you describe the initiative?

What is the nature of your involvement?

b) Does the school have a health & safety policy or H&S curriculum?

Prompts

Does your department have a separate policy?

Are the pupils involved in school risk assessments?

3 Risk Education (subject related)

a) What are the main risks that pupils face in your subject area?

Prompts

What teaching methods are used when introducing pupils to risks (e.g. risk assessment, rules, practical activity)?

Could you describe any teaching methods that have proved useful (are they integrated or stand-alone)?

- b) Just now we talked about guidance information, do you draw upon guidance or help from others for health, safety and welfare topics?

Prompts

Have you received any training for subject related H&S issues?

4 Risk Education (pupils)

- a) Do the pupils demonstrate awareness of risks and hazards?

Prompts

Are there any H&S issues that pupils respond well to?
What are the variations between age groups?

- b) Are there any barriers to teaching H&S?

Prompts

Behaviour, resources, time, knowledge?

4 New Materials

- a) Suppose some teaching resources were developed to help with risk issues, what information would you find useful?

Prompts

Have you any suggestions for design or format?
What methods of distribution are most likely to succeed?

10.2 APPENDIX 2: THE ENGLISH NATIONAL CURRICULUM GENERAL TEACHING REQUIREMENT FOR HEALTH & SAFETY

- 1 This statement applies to science, design and technology, information and communication technology, art and design, and physical education.
- 2 When working with tools, equipment and materials, in practical activities and in different environments, including those that are unfamiliar, pupils should be taught:
- a) about hazards, risks and risk control;
 - b) to recognise hazards, assess consequent risks and take steps to control the risks to themselves and others;
 - c) to use information to assess the immediate and cumulative risks;
 - d) to manage their environment to ensure the health and safety of themselves and others;
 - e) to explain the steps they take to control risks.

10.3 APPENDIX 3: RISK EDUCATION RESOURCES REFERRED TO DURING TEACHER INTERVIEWS

Most of these resources relate to PSE related topics.

- 1) Scotland Against Drugs
- 2) Coach company presentation – road safety
- 3) Electric Graffiti video
- 4) The Real Game
- 5) Rolf Harris – ‘Stranger Danger video’.
- 6) Childline website and visiting presenters
- 7) Police visits / presentations – community safety, various
- 8) “Making it happen” D&T Health & Safety guidelines

- 9) Baalpe Guide book
- 10) Longman publishers, 'Exploring Science' KS3 teaching resource

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