PSHE Subject Association

department for
children, schools and families

RoSPA
The Royal Society for the
Prevention of Accidents

A Review of Safety Education: Principles for effective practice

Dr Jenny McWhirter
January 2008

Review of Safety Education

Every child matters: The aim of children's services throughout England is to ensure that all children, whatever their background or circumstances should have the support they need to:

- Be healthy
- Stay safe
- Enjoy and achieve
- Make a positive contribution
- Achieve economic well-being.

This review looks particularly at the contribution that safety education can make to help children and young people to stay safe.

Purpose of the review:

a) Identify the key requirements of effective safety/risk education materials/resources for school-age children (5 – 16 years old);

b) Identify principle safety/risk education materials/resources available to schools in England and examine the extent to which they reflect the evidence around effectiveness;

c) Help practitioners (primarily teachers, LA Advisers and Safeguarding Boards) become more informed 'purchasers' and users of safety/risk education materials/resources.

Objectives:

i. To carry out a review of the British and international evidence base over the last 5[*] years to establish the principles of effective safety/risk education programmes in schools.

ii. To distil the evidence into approximately '10 key principles'.

iii. To conduct a trawl of safety/risk education materials/resources available to schools in England and establish a review process by which materials/resources can be assessed in terms of their 'fit' with the '10 key principles';

iv. To produce a practitioner briefing for publication on the web, aimed at LA PSHE Advisers, Local Healthy Schools Co-ordinators, Safeguarding Boards, Teachers. The briefing will also be of interest to publishers and agencies involved in safety education.

This report addresses a (i) and (ii) above
Introduction

Safety education is a broad topic, covering a very wide range of human activities in a vast number of settings. This review includes all education interventions intended to

---

[*] This time frame was widened to include relevant resources published since 1996 (i.e. 10 years) but limited to publications in the English language

prevent accidents and injuries [accidental injury] for 5 –16 year olds. It also includes aspects of personal safety, such as the prevention of bullying, physical aggression, and child abuse.

Risk education offers opportunities for learners to recognise hazards, assess risk and take steps to manage or control risk. Risk is a key concept in Personal, Social Health and Economic education (PSHE) and can include physical, social and emotional hazards.

In this review the term safety education has been used to encompass injury and accident prevention, personal safety and risk education. Where evidence relates specifically to reducing unintentional physical injury, the terms injury prevention or accident prevention will be used. Evidence about reducing the prevalence of or harm from bullying, physical aggression or child protection will be referred to as personal safety.

Safety education can be aimed at:
- a whole population (universal)
- at-risk groups where the incidence of accidents is higher than the population at large (selective)
- those identified by a screening process who may be at particular risk e.g. individuals with mobility or mental health problems (indicated prevention).

This is a review of selective safety education, since the target age group is 5-16 years, the age range for compulsory schooling in the UK.

The scale of harm to children

Accidental injury
Accidents are the leading cause of death and serious injuries for children and young people aged 1 to 14 years (DH, 2004). Young people are more vulnerable than adults to accidental injury for a number of reasons. These include: lack of experience of the hazard (e.g. traffic) ; developmental barriers to understanding and the acquisition or implementation of appropriate skills.   Some authors suggest that adolescence is characterised by risk taking, which can cause accidents, although there is a debate about whether this is a reflection of developmental changes, social influences or deliberate recklessness on the part of young people. Some children are more vulnerable than others. For example, children in Social Class V are 3.5 times more likely to be killed or seriously injured in a road accident than children in social classes I-III (DfT, 2006).

Adults can lack awareness of children's behaviour and needs with respect to accident and injury prevention and so may contribute to incidents that cause injury to children and young people. For example, the behaviour of young pedestrians can be unpredictable near the roads but not all adults make allowances for this when driving.

Bullying
There is evidence of bullying in all schools and so all young people of school age are at risk of being bullied at some time. In some studies half of all children report having been bullied. In a study carried out in 1997 and reported in 'Don't suffer in silence' (DfES, 2002) around a third of pupils in a sample of English schools reported ever having been bullied, and a quarter reported having bullied another child at least once. In severe cases bullying can result in self-harm or suicide (Cooper, 2004). Generally

school staff report fewer incidents of bullying than young people and bullying may also be under-recognised by parents (DfES, 2002).

<u>Violence</u>
Sixty percent of all violent incidents in England and Wales are committed on, or by, young people aged 10-30 years (Home Office, 2003). Assault is the second most common reason for young men aged 15-24 years to be admitted to hospital and 14-17 year old young men are most likely to be involved in violence (McVeigh et al, 2005). In 2005, a fifth of 10-15 year olds report having been assaulted in the last 12 months (Home Office, 2006). These figures may under-represent assaults to those under 16 as assaults which occur on school premises are not automatically recorded by police (DfES, HO, ACPO, 2004). The British Crime Survey collects self-reports of violence and other crime only from those aged 16 and above.

<u>Child abuse</u>
Abuse of children (not including neglect) is a small but significant problem in the UK. 7% of 18-24 year olds reported serious physical abuse by parents and carers during their childhood and 1% reported sexual abuse while they were under the age of 16 (Cawson, 2000). Those who abuse children are often known to the child. Abuse by strangers is rare and may be only 5% of the total reports of abuse of under-16s. Young people can also abuse other children and young people and in 2003, 25% of all those convicted of sexual offences were aged between 10 and 24 (Home Office, CSIP, NIMHE and DH, 2006).

Prevention strategies

Most community based interventions to reduce the risk of accidental injury are multi-level and are characterised by attempts to modify the environment (sometimes referred to as Engineering) the use of legislation to change people's behaviour (Enforcement) and attempts to provide young people with opportunities to gain knowledge, skills and explore their attitudes to safety and risk in a controlled environment (Education). Together, the 'three E's' of Engineering, Enforcement and Education have contributed to a reduction in the number of young people aged 5-16 killed or seriously injured in accidents in the UK, particularly on the road (DfT, 2007). Some of the reduction may also be due to a lower exposure to risk, particularly among 5-12 year olds. Examples of this are increasing numbers children being driven to school rather than walking compared with 10 years ago (DfT, 2007).

In contrast to serious accidental injury, bullying is common in schools in the developed world (Smith et al 2004) and can continue outside school (on the way to and from school and by mobile phone and via the internet). However, as with injury prevention, successful education interventions to reduce the incidence of, and harm caused by bullying are also often multi-level. Schools are encouraged to adopt policies which modify the physical and social environment of the school, use classroom activities to raise awareness of what bullying is and develop procedures for dealing with bullying behaviour when reported or identified, which may include disciplinary measures (DfES, 2002).

School staff have an important role in preventing violence on the premises, but also in identifying children at risk from domestic violence and child abuse. Violence and child abuse prevention programmes are often described as being based on an ecological model, where the risk factors for individual victims or perpetrators are seen in the context of their immediate relationships, the community and society as a whole (Krug, 2002). School based interventions often adopt social influences approaches, where children are taught skills to avoid confrontation and to resist pressure from

peers and adults with the aim of reducing the prevalence of, and harm resulting from, violence and abuse. Awareness raising campaigns are aimed at increasing children's confidence in reporting incidents and, crucially, at ensuring adults recognise and react to children's disclosures.

The principle setting for most of the prevention interventions and resources reviewed here is formal educational institutions (primary and secondary schools) although evidence from informal education has not been excluded.

While this review considers the impact of safety education, it should not be forgotten that accident rates are lowest in developed countries where safety education is often accompanied by engineering and enforcement and where there is a good standard of general education. The review findings should, therefore, be considered in the context of the communities in which they might be implemented (a whole community approach).

Methods

Given the limited timescale and resource for the review, the review began with an overview of principles of effectiveness described by expert practitioners or published or in other sources relevant to Personal Social and Health Education (PSHE). Sources included reviews of specific aspects of PSHE such as bullying, drug education, risk education and specific aspects of safety education such as road safety, which have been the subject of several major effectiveness reviews in recent years. This generated a list of candidate principles, which became the focus for further examination in the literature. As the review progressed further principles were added and others modified to generate the list in Table 1.

The literature searches were made using the National Children's Bureau Library & Information Service database: ChildData. Keyword terms were: bullying, child abuse, disclosure, effectiveness, evaluation, intervention programmes, safety.

and by the RoSPA Information Centre using the following external databases, via the Dialog host system:
- ERIC (Education Resources Information Center – a US database)
- British Education Index
- Education Abstracts
- PsycINFO
- Social SciSearch

The following search terms were used:
Safety(w)education(w)safety *and* (evluat?or effective? Or assess? Or apprais?) child safety, child abuse, child abduct?, personal safety, stranger danger, prevent?, effective?, evaluat?, interven?. The search was narrowed to include only UK-related items published between the years 2000 – 2007.

A manual search of Health Education 1997-2007 was also carried out.

This review has drawn heavily on published systematic and other reviews, where available. There has been no attempt at meta-analysis of studies reviewed here.

Findings

[A summary of the evidence is presented in Appendix 1].

Review of evidence
NB In this section the principle is first outlined and then general evidence for the principle is described and reviewed in 'Overview'. The specific evidence for injury prevention and personal safety is then examined. Personal safety includes prevention of bullying, child abuse and violence.

Encourage the adoption of, or reinforce a whole school approach, within the wider community

> Resources may deliver all or part of whole school approach and should encourage or reinforce a whole school approach. A whole school approach encompasses the formal and informal curriculum, policy (both as written and as implemented) and the relationships among staff, pupils, parents, carers, with other agencies and with the wider community.

Overview

A whole school approach is based on the settings approach to health promotion, first recommended in the Ottawa Charter (WHO, 1986). By reinforcing informed choice with health promoting policy, the healthy choice should become the easy choice.

The National Healthy Schools Programme (NHSP) in England is an example of how the promotion of good health can be embedded in a school setting, supported by healthy public policy. Important elements of the NHSP in England include: policy development; assessing, recording and reporting pupils' achievement; giving pupils a voice; curriculum planning and work with outside agencies; school culture and environment; health and welfare and professional development needs of staff; leadership, management and managing change; teaching and learning and provision of pupil support services. The NHSP is supported by the Department of Health (DH) and the Department for Children, Schools and families (DCSF). The aim is for all schools in England to be working towards National Healthy School status by 2009.

A review of international evidence by Stewart-Brown (2006) found that sustained whole school approaches to some aspects of health were effective, especially mental health promotion and the prevention of violence. Multi-factorial programmes (involving policy, curriculum and the wider community) were also effective in promoting healthy eating and physical activity, but less effective in preventing drug misuse.

Warwick et al (2004) have examined the effect of the National Healthy School Standard (NHSS) -an earlier version of the NHSP in primary and secondary schools in England. Schools working at level 3, the most intensive level of intervention, showed the most promising changes, which related well to Ofsted inspections of PSHE provision and involvement of pupils.

In primary schools, where co-ordination of healthy schools was found to be better than in secondary schools, there was some evidence for improvement of academic standards. In secondary schools taking part in the NHSS, some health indicators suggested modest impact on health outcomes. Primary school pupils were less likely

to report feeling bullied, while secondary school pupils in NHSS schools were more likely to have higher self esteem, and to feel at ease when visiting the doctor, and less likely to have used drugs. In addition, involvement in NHSS brought coherence and status to what had previously been disparate health and safety related activities (Warwick et al, 2004).

Studies of other forms of whole school approach have found positive effects, especially those focussed on social and emotional aspects of health. Evidence from a systematic review of approaches to mental health promotion in schools suggests whole school approaches are more effective than brief, classroom focussed interventions (Wells, Barlow and Stewart-Brown, 2003).

However, West (2006) suggests that it may be counterproductive to look at whole school approaches to separate aspects of health, since this is in essence contrary to the concept of a whole school approach. West argues that the 'school' effects, which some study designs seek to confound, are the very effects which might be most interesting with respect to health behaviours. In the '11-16 study' West and colleagues (2004) were able to demonstrate that the overall school ethos had a significant positive impact on smoking and drug related behaviour which was independent of individual pupil characteristics including social class.

Injury prevention

There appear to be few studies of the effectiveness of whole school approaches to injury prevention and the majority of evidence relates to road safety. Many schools in the UK have policies for recording and managing accidents of all kinds and most primary schools include accident prevention in the curriculum, whether it is part of a statutory provision or not. Local road safety officers (RSOs) support road safety education in schools and parents and carers are often engaged in road safety education through traffic clubs, as kerbside trainers, helping with cycling skills programmes and with walking buses. Police and other non-statutory agencies also support schools with safety education.

In addition, schools are encouraged to develop travel plans that encompass safe and sustainable travel to and from school. Travel plans also provide opportunities to consult with pupils, families and other agencies and can be linked to the wider curriculum, and to anti-bullying strategies (Cooper, 2005). Thus, many of the elements of a whole school approach are in place in many schools in the UK, particularly with respect to road safety, and whole school approaches to injury prevention have been recommended for many years.

Some supporting evidence for effectiveness of whole school approaches can be found in reviews of multi-level approaches, where a curriculum programme is reinforced or enhanced by a second element. For example, Towner, Dowswell Burke et al (2002) found that cycle helmet education was more likely to be effective in increasing uptake and use of cycle helmets when complemented by price discount schemes. However, the most disadvantaged groups, for whom these schemes were developed, have the lowest uptake.

Similarly community campaigns, which include a school element, reinforced by media campaigns aimed at families and other community members can be successful in reducing cycle injuries as demonstrated by Farley, Vaez and Laflamme (2004) in Canada.

A review by Spinks (2005) concluded that community interventions, supported by high profile campaigns, classroom activities, legislation and incentives were most effective in promoting cycle helmet use, emphasising the importance of embedding whole school approaches in the wider community.

<u>Personal safety</u>

One of the best documented anti-bullying programmes was developed for Norwegian schools following the suicide of 3 boys. The Olweus anti-bullying programme was a whole school approach and claimed to reduce reports of being bullied and bullying by 50% (Olweus, 1993; Olweus, Limber and Mihalic ,1999) While this degree of success has not been replicated fully in other studies, the whole school approach has also been associated with reductions in social isolation in boys, other problem behaviours such as vandalism and truanting and with an improved climate, more positive social relationships and better attitudes towards school and schoolwork (Werle, 2006).

Cooper (2005) lists a variety of effective anti-bullying measures, which together could add up to a whole school approach. Cooper (2005) also recommends using the school travel plan to counter bullying on routes to and from school. James, Lawlor, Flynn et al (2006) describe the implementation of whole school approach to bullying prevention in Ireland. In the latter study measures were only taken after implementation. However, both staff and students reported improvements, especially confidence in reporting (pupils) and handling incidents of bullying (staff).

A whole school approach to bullying prevention is widely linked to the healthy or health promoting school movement. Cross, Pintabona, Hall et al (2004) describe the process for establishing anti-bullying guidelines for schools and provide an overview based on the Australian health promoting school domains. The healthy school is associated with increases in social capital (broadly defined as a resource that resides in the relationships people have with each other) among primary school students (Sun and Stewart, 2007). Whole school approaches are also associated with greater resilience that can contribute to reducing the harm from bullying and other risk behaviours (Knight, 2007)

The UK based Safer Schools Partnerships (SSPs), where a fully operational police officer is associated with a group of schools, works as part of a multi-agency partnership in a school or works within a single school, have shown promise in reducing reports of bullying and in helping children to feel safer at school. Interestingly, reports of being involved in bullying others were also increased. Attendance rates were significantly improved in SSP schools (Bowles, Reyes, Pradipityo, 2004).

Programmes, like the SSP, which go beyond the whole school to whole community approaches, may have greater potential than whole school approaches, while being even more challenging to evaluate. Ngwe, Liu, Flay et al (2004) describe a well-designed longitudinal study of the efficacy of a school and community wide programme designed to reduce risk taking behaviour among 14 year old African American pupils. When compared with a school based social development programme and a more conventional heath education programme focussing on physical activity, nutrition and other health topics, the school and community wide programme impacted both on mediating factors and on incidents of violent behaviour.

Similar findings were reported for boys taking part in DARE Plus programmes that included school, community and family (Komro et al, 2004). In this study, while boys'

self reports of expectations of violence fell, and were able to give more reasons to be non-violent, girls reported lower expectations of victimisation.

In contrast to the evidence supporting a whole school or whole community approach to personal safety, there is evidence that less holistic approaches, such assertiveness training, have little benefit (Hunt, 2007). In the US, where bullying has been linked to incidents of extreme violence, approaches based on 'humanising' the school environment have been shown to be more effective than installing a high visibility security system in preventing violence and disorder (Werle, 2006).

Evidence from the literature on teaching children about the risk of physical or sexual abuse suggests that even where short term interventions can be shown to improve children's knowledge, skills, and 'wariness', children may be reluctant or unable to put these skills into action (Johnson, 1997, Moran et al, 1997). Authors warn against relying on single interventions with children to prevent abuse by adults and call for a multi-systemic approach involving teachers, parents and child protection agencies (MacIntyre and Carr, 2000).

Use active approaches to teaching and learning (including interactive and experiential learning)

> *Active approaches to teaching and learning include all strategies in and out of the classroom where the learner:*
> - *seeks out information for him or herself,*
> - *develops a physical skill,*
> - *engages in discussion about a topic in pairs or groups (interactive learning),*
> - *is engaged in problem solving independently or in a group,*
> - *adopts a role, or considers an issue from someone else's viewpoint.*
>
> *Active learning may draw on the learner's personal experience (experiential learning.) A resource should describe how to manage the classroom climate e.g. using ground rules, using distancing techniques.*

Overview

Using active approaches to teaching and learning is a widely accepted principle of effective PSHE, supported by educational theory which suggests that 'doing' is more likely to promote understanding than listening or learning by rote. Interactive approaches to learning have been identified as key to effective practice in the prevention of substance misuse (Tobler, 1999, 2000). Experiential learning is most likely to be effective where a substantial proportion of the learners have relevant and related experience (Wight, 1999).

Injury prevention

Guidance on Safety Education issued by the DfES in 2001 (now DCSF) identifies an active approach as a key factor in helping children to keep themselves and others safe

'Safety and risk are subjects which do not generally lend themselves well to passive or didactic teaching styles. Knowing how to recognise hazards and assess and manage risks needs to be complemented with the right attitudes and behaviour. In the classroom these aspects are best introduced, practised and extended through an active or participatory approach. An active approach to teaching and learning about safety and risk in the classroom will include group work, simulations, role-play and problem solving and will engage with pupils' everyday experiences.' Safety Education , DfES Guidance 0161/20002, December 2001.

As suggested by DfES Guidance, active approaches to teaching and learning can include small group work where children and young people work together to respond to tasks set by a teacher or facilitator, which may draw on personal experience. Active learning approaches are frequently evaluated in terms of changing knowledge and attitudes but less often evaluated in terms of safety related behaviour or injury prevention.

Visits to safety centres and one off events such as Junior Citizen schemes which are collectively known as LASER (Learning About Safety by Experiencing Risk) centres offer children the opportunity to be actively involved in a range of scenarios involving risk in familiar settings. These opportunities can be shown to enhance safety knowledge in primary school children (Oxford Evaluation Team, 2003). Information gained is retained similarly by boys and girls, but can decay more quickly in children from 'low achieving' schools.

Theatre in Education (TIE) is an increasingly popular approach to delivery of PSHE and has been shown to increase intentions among adolescents not to accept lifts from drivers who have been drinking. (Powney et al, 1995). The study showed that other approaches were equally effective, but rated as less enjoyable by young people. TIE using forum theatre, where pupils are actively involved in the performance through hot seating and other strategies, has been shown to raise awareness of the link between road accidents and risk taking for children aged 8-11 years (McWhirter, 2002) but not to modify the children's understanding of risk. Evans and Norman (2002) found that changes in behavioural intention were significant only for adolescents who had been actively involved in creating a TIE performance.

An intervention aimed at preventing farming injuries used an approach described as 'participatory action research' where students and teachers worked together to develop narrative simulations based on farm accident stories and farm work (Reed, Kidd, Westneat et al 2001). Students participating in the programme showed statistically significant positive changes in attitudes to safety and intention to change behaviours.

Towner, Dowswell, Burkes et al (2001) carried out a systematic review, later updated (Towner and Errington, 2004) for an HDA evidence briefing. The review suggests there is good evidence that active participation in kerbside training improved pedestrian skills in 6-7 year olds. According to Tolmie, Thomson, Foot et al (2005); Tolmie (2007) a key feature of kerbside training in pedestrian skills for young people is the interaction between an adult, who can support and extend children's discussions, and a small group of peers who have been set a problem of finding a safe way to cross a road.

Interventions that involve active participation to develop a related skill such as cycling proficiency can also encourage safer behaviour (Towner and Errington, 2004). However, Towner and others have warned that while studies of safety education can

show knowledge gain and behaviour change there is insufficient evidence to link these impacts to injury prevention.

<u>Personal safety</u>

Interventions aimed at reducing the incidence of bullying and on improving outcomes for those who have been bullied often rely on developing social skills in victims, bullies and bystanders. However, universal approaches have had limited success when used in isolation from other strategies, even if they use active teaching and learning strategies, such as role play, to teach assertiveness skills and provide 'scripts' for children to rehearse and use when bullied (Hunt, 2007).   Children should not be encouraged to demonstrate and rehearse bullying in role-play as this can model and reinforce undesirable behaviours.

A meta analysis of child sexual abuse prevention programmes demonstrated that programmes in which children were actively involved and extended over four or more sessions were most likely to be effective than single sessions (Davis and Gidycz, 2000).   A Theatre in Education project achieved some degree of success in helping children aged 5-6 to recognise and respond to inappropriate touching. However, researchers questioned the extent to which the project would be embedded as part of a whole school approach (Orme and Salmon, 2002). The sustainability of many such interventions is therefore questionable.

Involve young people in real decisions to help them stay safe

> Involving young people includes young people's participation in real decisions about keeping themselves safe, in and out of the classroom. Young people may be involved in designing or participating in surveys, participating in their school council, choosing which activities they want to take part in outside the formal curriculum, in peer education projects, in mentoring or peer support. Activities for young people should include identification of hazards, participating in risk assessment (e.g. assessing whether risks are trivial, tolerable or intolerable) and being part of actions to control or manage risk to themselves and others.

<u>Overview</u>

Engaging young people in decisions about things that affect them and their daily lives is a crucial element of a healthy school. Most evidence for effectiveness of involving young people comes from studies of peer education and peer support projects. Peer education has become a popular approach to PSHE. (This description includes examples where older pupils work together to deliver activities for younger pupils.)

Peer education can be particularly effective if peer leaders share common community roots (McDonald, Roche, Durbridge et al 2003). Other factors also influence the effectiveness of peer education. For example, in a study of a child-to-child approach to healthy eating Freeman and Bunting (2003) found that peer education was most effective in changing behaviour amongst children attending schools with higher socio-economic status. A review by Stewart-Brown (2006) concluded that peer

education can be more effective than teacher led interventions and that pupils engage well with this approach. However, reviews often indicate that those who benefit most are individuals who act as peer educators (Goren and Wright, 2006). Peer education and peer support projects generally require a high level of involvement and commitment from adults (Tolmie, 2007).

<u>Injury prevention</u>

Frederick and Barlow (2006) describe a feasibility review of a project where pupils at secondary school (aged 14-15 years) devised and delivered safety education lessons for primary school pupils aged 6-7 years. Small gains in knowledge, retained for at least two months, were observed amongst the younger pupils and older pupils reported knowledge gain, high levels of satisfaction and greater confidence having taken part on the project.

A TIE project where young adolescents developed and delivered a road safety intervention for their own age group had only a limited short term impact on the audience, but was effective in changing the peer educators' intentions to run across the road (Evans and Norman, 2002)

<u>Personal safety</u>

Peer support is widely used as part of anti-bullying interventions in both primary and secondary schools (Cowie and Wallace, 2002; Cowie and Hutson, 2005). Peer supporters receive training to:

- Work together beyond their usual friendship groups.
- Develop good communications skills, to share information and to reflect on their own emotions in relationships with others.
- Deal with conflict and help peers relate to one another in more constructive, non-violent ways.

The approach includes bullies, victims and bystanders. In some examples young people also play a key role in managing peer support systems. This brings additional benefits e.g. in identifying new forms of bullying and using evidence from their evaluation to improve the service. The evidence suggests that peer support may not impact on the prevalence of bullying but can reduce the harm caused to victims and enable them to report experiences of bullying. As in peer education, peer supporters also benefit from the training they receive (Cowie and Hutson, 2005) and report high levels of satisfaction in becoming involved.

Peer mentoring and peer counselling have not been shown to be effective in preventing violence amongst young people (McVeigh, Hughes, Bellis et al 2005). However, adult mentoring programmes have been successful in improving school attendance and reducing anti-social behaviour (Krug et al, 2002).

Assess children and young people's learning needs

Local and national evidence can help to identify factors that suggest children of a particular age or group are at risk. Teaching and learning strategies to address these needs should reflect the age and developmental stage of the learner, take account of social and cultural needs and the effects of gender on safety related behaviour and learning. Strategies to assess learning needs can involve open ended forms of questioning, whether through informal discussion, mind mapping,

<u>Overview</u>

Personalised learning recognises that all young people are unique and have distinct learning needs and interests. In PSHE, one size most certainly does not fit all. Much of our understanding of matching content and style of delivery to developmental need comes from studies of effective and ineffective approaches to drug education (McBride, 2003). Research in safety education reveals a variety of trends that it is helpful to highlight. The most obvious of these are age, or developmental stage, ethnic group and socio-economic factors. Gender also plays an important part in determining how educational interventions impact on learning about safety.

While much has been written about developmental and socio-cultural needs, gender is rarely taken into account when devising interventions in PSHE. Recently a briefing paper for DrugScope on gender and drug education identified differences in learning styles between boys and girls and made recommendations for practitioners about the way drug education is delivered to maximise the impact for boys and girls (DrugScope, 2006).

<u>Injury prevention</u>

Developmental factors
The most work on injury prevention and child development appears to have been done in road safety education. In 2001 the Global Road Safety Partnership (GRSP) issued guidance for those developing road safety interventions (Road safety education in schools: saving lives and limbs). This guidance highlighted the importance of using teaching methods that follow the principles established by research in child development. A review by Dragutinovic and Twisk (2006) also highlighted the developmental needs of learners with respect to safety on the roads, indicating that training should begin with practical tasks and skills and move onto more abstract reasoning as the learner matures.

We have already seen that practical road safety training is effective in modifying behaviour in younger children. However, practical training also needs to start where children are: a review by RoSPA of the effectiveness of cyclist training (RoSPA, 2000) identified two interventions for cyclist training which were unsuccessful because they had failed to take account of pupil's own individually determined rules for coping with traffic.

Thornton, Pearson, Andree, et al (1999) explored children's perceptions of responsibility for road accidents and found the children used two criteria: 'not to damage things' (damage avoidant) and 'not to make the kind of mistakes which might cause a crash' (error avoidant). Up to the age of 5 all children were damage avoidant and ascribed all responsibility for road accidents to the road user who crashes into something, even when offered clues about other factors which might have an influence. At 8 years old only one fifth were primarily error avoidant. Based

on these findings Thornton et al (1999) concluded that educational programmes should not assume that children share the same views and interpretations as adults.

The influence of child development has been examined by Dragutinovic and Twisk (2006) who identified studies where children's problem solving skills limited the effectiveness of road safety education. Studies have found that individual children under the age of 9 years were unable to identify dangerous locations when crossing the road (Dunbar, Lewis and Hill, 1999). The same authors also found considerable age related variation in attention switching and concentration, both of which are essential for safe road crossing, with older children more able to do better at both (Dunbar, Lewis and Hill, 2001). There are differences in the way which younger and older children process information such as visual and auditory cues (Foot, Tolmie, Thomson et al, 1999) and in cognitive styles and impulsivity (Whitebread and Neilson, 1999) that may limit younger children's road crossing skills.

These findings contrast with those of Tolmie (2007) who demonstrated that young children can learn complex road crossing skills if their learning is practical, supported by an adult who encourages active problem solving and amongst a small group of peers. This suggests that active teaching and learning strategies can help to overcome some developmental barriers.

Dragutinovic and Twisk (2006) highlight the comparative lack of evidence of effectiveness of adolescent road safety interventions but conclude that information based interventions are unlikely to be successful, especially with older teenagers. This is because adolescents tend to be aware of their own behaviour on the roads, whether safe or unsafe, but have no intention to change. There is evidence that pre-driver training for older teenagers may increase accidents to young drivers by enabling young drivers to pass their driving test sooner and to overestimate their skills (Vernick, Li, Ogaiti et al, 1999). Overconfidence coupled with inexperience appears to be a dangerous combination for young drivers.

Arnett, 2002 identified a number of adolescent traits which should be taken into account when planning road safety education,. These are:

- Adolescents are strongly influenced by what they think their peers think of them
- In groups, adolescents can generate a state of elation
- Adolescents try to escape the control of authority figures and find it interesting to experiment with anti-authority activities
- Adolescents underestimate the likelihood of negative events
- Adolescents overestimate their skills and competencies
- Adolescents have strong mood swings
- Male adolescents have a tendency to aggression and sensation seeking

According to Dragutinovic and Twisk (2006) safety education for this age group should address attitudes and values with respect to risk taking, peer influence and peer pressure, and help students to develop more informed estimation of risk and personal skills and competencies.

A study of teenage attitudes to cycle helmets underlines how even a small age difference can be affect attitudes to safety. Takriti, Lee and Mann (2001) found that 11-13 year olds were rule driven with respect to cycle helmet wearing, while 14-16 year olds were more concerned with appearance, comfort and their friend's opinions (Takriti et al, 2001).

The extent to which these findings can be generalised from road safety to other injury prevention strategies is not known, but it is clear that learning in road safety education is domain specific (Dragutinovic and Twisk, 2006) so it cannot be assumed that because a young child has learned how to cross the road safely, that they will be able to transfer the principles to a similar setting, for example car parks or rail crossings.

Risk is a unifying, transferable concept, which underpins many topics in injury prevention and PSHE generally. McWhirter (McWhirter,1994; McWhirter and Weston, 1994; McWhirter, 1997; McWhirter, 1998; McWhirter, 2002; McWhirter and South, 2005) explored how children learn about risk and identified important developmental trends in their capacity to recognise hazards, assess risk to themselves and others and take appropriate steps to control risk. However, interventions based on this more transferable concept have not yet been evaluated.

Socio-cultural need
Injury prevention interventions based on socio-cultural differences are rare, but it is recognised that being a member of an minority ethnic group is a significant predictor for injuries to children on the roads and at home, both in the UK and internationally. A report for the Department for Transport (Thomson, Tolmie and Mamoon, 2001) suggests that the increased risk is strongly related to the social and economic circumstances of the family, who also tend to live in the most deprived communities. The effect may be exacerbated by the time since arrival in the host country. Adults and children may be unaware of the road conditions and apply strategies that are not relevant to their new setting.

There is also the possibility that children from minority ethnic communities experience greater exposure to risk because they make more unaccompanied journeys on foot. The report suggests that interventions targeted at disadvantaged communities should include parents and carers, as well as children, to increase the possibility that learning will be modelled and reinforced in informal settings.

Turner, Hill, Stafford and Walker (2006) report on an interview study where children from disadvantaged areas described how they kept themselves safe in their communities. Despite having many concerns about traffic, graffiti, vandalism, adults, older children and gangs and being out in the dark, the children were positive about their neighbourhoods and communities. This demonstrates the importance of understanding children's starting points, alongside epidemiological evidence.

Gender
Gender is often a predictor of outcomes in safety education. For cycle helmet education is more likely to influence behaviour in young adolescent girls than older boys (Towner, 2004). Girls and boys also tend to focus on different features of cycle helmets. Takriti, et al (2001) found that girls placed more importance on comfort and whether cycle helmet wearing was compulsory at school, while boys placed more importance in whether cycle helmet wearing was compulsory by law.

Paradoxically, one of the few studies which examined the health outcomes of a community based programme to encourage the use of cycle helmets found that, while girls were more likely than boys to acquire and wear cycle helmets, overall the campaign resulted in fewer head injuries for boys (Farley et al, 2004). This may be because the boys were more likely to cycle in riskier ways and places and so the impact of cycle helmet wearing on injury rates was greater.

Anti bullying

Developmental need
Like safety education, there are calls for anti-bullying education to be matched to children's developmental needs (Pepler, Smith and Rigby, 2004). Reid, Monsen and Rivers (2004) reviewed the evidence for an age effect in the reporting of bullying. Children of primary and middle school age are more likely to report bullying than secondary school pupils. Younger pupils more often report that they have told a family member than a teacher. Despite bullying being common throughout westernised countries, children in some countries seemed to find it easier to report bullying to family members than those from other countries (Reid at al 2004).

We have seen that peer support strategies can work well in both primary and secondary schools but age and developmental stage remain important factors in ant-bullying interventions. In an important book reviewing the success of anti-bullying interventions, Rigby, Smith and Pepler, (2004) summarised findings from the previous 10 years. They found that developmental needs are particularly important when it comes to bullying prevention, since research suggests few children adopt a stabilised victim role beyond the age of 8-9 years. Thus, intervention programmes aimed at children younger than 8-9 years may be more successful in preventing vulnerable children from becoming the systematic targets of bullies.

Anti-bullying programmes in primary schools appear to have greater benefits than those in secondary schools. Pupils' self-reports of bullying decrease less amongst secondary school pupils, following interventions, and may even increase in older adolescents. Reasons for these differences are unclear, and may be attributable in part to differences in school organisation, but developmental differences in willingness to report bullying to adults in authority and an apparent dip in empathy for victims in early adolescence also play a part. More positive attitudes to victims re-emerge in late adolescence (Pepler, Smith and Rigby, 2004).

Gender
Gender may be a more important factor than age or developmental stage in the prevention of bullying. In the early 1990's a number of studies seemed to show that girls were less likely than boys to be bullied or know someone who had been bullied (Reid et al, 2004). However, further exploration of bullying identified inconsistencies in the forms of bullying reported by boys and girls: girls used and experienced more indirect forms such as exclusion and rumour-mongering and boys used and experienced more direct forms, including physical aggression. A review of anti-bullying interventions suggested that when schools took these differences into account anti-bullying interventions appeared to be more successful for boys than girls. Girls often reported an increase in bullying following some interventions, perhaps because the intervention helped girls to identify forms of bullying which had previously been unreported (Carney and Merrell, 2001).

However, some studies report that girls are more receptive to anti-bullying messages (Olweus, 1999) and, generally, girls have more positive attitudes towards victims (Menesini, Eslea, Smith, et al 1997, Olweus and Endresen, 1998). Girls are also more willing to take an active role in anti-bullying interventions, although boys find fewer barriers to engagement in single sex schools (Cowie, 2000).

Interestingly there seem to be fewer gender effects in programmes designed to teach personal safety skills, particularly for young children (Wurtele, Kast, Miller-Perrin and Kondrick, 1989)

Violence prevention programmes also seem to have differential effects for boys and girls (Komro et al 2004, Ialongo, Werthammer, Kellam et al 1999) suggesting that the motivation for violent or aggressive behaviour varies with gender

Teach safety as part of a comprehensive personal social and health curriculum

A comprehensive personal, social and health curriculum helps children and young people learn how to keep themselves healthy <u>and</u> to stay safe. It provides opportunities to learn specific and transferable skills and knowledge in a wide range of circumstances, but with attention to feelings, skills, attitudes, values and attributes. Topics should be introduced in the early years at school and extended and revisited throughout the key stages, introducing more specific language, knowledge and skill as the child develops (spiral curriculum). A comprehensive personal social and health curriculum will offer pupils a specific time and place to learn about being healthy and staying safe (such as dedicated PSHE time) but will also be cross curricular, drawing on different programmes of study (e.g. maths, English, science, drama) to help young people access and use relevant information.

<u>Overview</u>

A comprehensive curriculum in Personal Social and Health Education (PSHE) focuses on the knowledge, skills and attitudes children and young people need to be and stay healthy and safe, now and in the future. It has long been recognised that, while the knowledge required to eat healthily, stay safe on the road and avoid substance misuse may be very specific, many of the skills needed are similar e.g. recognising hazards, resisting pressure, making decisions. Because of this many PSHE curriculum programmes have a focus on the skills and attitudes needed to live healthily and safely, rather than on knowledge alone (Blake, 2005). Such a curriculum is supported by values, which underpin health promotion generally (WHO, 1986) and by an understanding of the attributes of a healthy lifestyle.

Commercially available resources and those from government –funded sources such as QCA, Teachernet and Wired for Health often take it as proven that that a comprehensive health curriculum, based on a spiral curriculum, which addresses knowledge, skills and attitudes across the curriculum, is an effective approach to safety education generally. However, the empirical evidence for this is weak, and there is more evidence of the *ineffectiveness* of alternative approaches than there is evidence for its effectiveness.

Cross curricular approaches
While PSHE is non –statutory in England, the PSHE framework provides a focus for safety education, which can be developed in subject specific contexts across the curriculum. Thus, safety is included in the programmes of study for science, design and technology, physical education and art. However, there little direct evidence in the literature for, or against, cross-curricular approaches in preventing injury or promoting personal-safety. Many schools find that delivering health topics through

a cross-curricular approach is organisationally difficult, especially in secondary schools.

However, where safety education is delivered only through individual subjects such as science or physical education there is a possibility that safety knowledge and skills will be seen solely as belonging to that subject and not transferable to other subject areas or to life beyond school. In addition safety may be marginalised at the expense of subject specific knowledge or skills.

Adams (2003) called for a limited cross-curricular approach with health education linked to the Citizenship framework. While this approach may be too limited, there are organisational advantages in restricting the number of subject areas through which safety education is delivered.

An alternative approach to cross curricularity is to see the PSHE classroom as the place where topics can be examined through the skills developed in other subject areas, such as maths, English, science and geography. Such an approach again places huge demands on secondary schools whose teachers tend to be subject specialists. As before, there is no empirical evidence for, or against, such an approach.

Spiral curriculum
Research into child development and education provide the evidence for a spiral curriculum. This approach to curriculum planning recognises the importance of building on children's existing knowledge, skills and understanding, and 'scaffolding their learning' so that the next step is sufficiently manageable and challenging. There is evidence that drug education programmes consisting of several sessions, followed by 'booster' sessions in the following year are effective in delaying the onset of substance use (Botvin, Renick and Baker,1983). QCA provides 'end of key stage statements' for PSHE which reflect the principles of a spiral curriculum (QCA, 2005)

Injury prevention

Studies evaluating the effectiveness of injury prevention programmes often measure knowledge gain or attitude change as a proxy for effectiveness, but there are difficulties in establishing causal links between these measures and a reduction in the number of casualties. Much evidence of effectiveness in improving knowledge or challenging and changing attitudes to safety through the curriculum, come from one-off interventions such as visits to Safety Centres (See LASER website http://www.lasersafety.org.uk) or Theatre in Education performances. Such opportunities can provide a valuable addition to a comprehensive health curriculum, and many providers encourage this by offering opportunities to plan with teachers and preparatory and follow up activities. However, schools have little control over when and where these opportunities will be offered and providers have little control over if, or how, their resources are used (Evans and Norman, 2002). Such resources may not be sustainable in the longer term (Orme and Salmon, 2002) and are best seen as an addition to, rather than a substitute for, a comprehensive health curriculum.

Some success is claimed with respect to specific safety messages using campaigns based on a series of TV programmes or 'edutainment' which are more sustainable because of the availability of recordings (Tamir, Shabtai, Weinstein et al, 2003). However, these approaches are seldom subject to rigorous evaluation and seem to have greatest potential where children's baseline safety knowledge is low and where exposure to the campaign is close to universal (Tamir et al, 2003).

Even where a classroom based programme is focussed on specific skills and knowledge, and is designed to be delivered by teachers, rather than external providers, over several sessions with a particular age group, the impact can depend more on the individual teacher delivering the curriculum than on the resources used (Berry and Romo, 2006).

Overall these studies suggest that the potential for effective injury prevention with single interventions is limited unless they are sustainable and part of a wider curriculum programme.

Personal safety

Evidence reviewed in anti-bullying programmes also demonstrates that one off activities have little impact (Hunt, 2007) while more sustained interventions of several sessions are more likely to demonstrate success, especially if delivered by trained facilitators. (Hudson, Zimmerman and Morrel-Samuels, 2006)

Theatre in Education has been evaluated with respect to promoting personal safety with 5-6 year olds (Orme and Salmon, 2002). In this study children were encouraged to use a variety of strategies to show when they felt uncomfortable, especially with respect to 'inappropriate touching'. Evaluation using photographs of the drama in a follow-up session found the children had retained many of the main messages of the drama. Teachers reported that children spontaneously used the strategies in the playground. However, the authors found that some of the schools did not have a clear view of how the project could be embedded in their PSHE programme and questioned the sustainability of the benefits without this.

Use realistic and relevant settings and resources

> Real life data and examples (but not those designed simply to shock) help to engage young people and to challenge misconceptions e.g. 'bullying is acceptable behaviour among children' or 'accidents just happen' where necessary. (Using data in this way is also known as a normative approach).

Overview

Historically health and safety education have been characterised by didactic, 'shock', or guilt inducing approaches. Such approaches have been widely discredited. This review has addressed the importance of active approaches to learning about safety

earlier. However, 'shock-horror' and guilt inducing approaches retain an intuitive appeal. Evidence suggests that attempts to frighten young people into changing their behaviour can have at best only short term benefits (Girasek, 2006, O'Dea, 2005), may fuel anxiety and, at worst, can be counterproductive and encourage risk taking amongst adolescents, particularly those who are sensation-seekers (Plant and Plant, 1992).

Another historically popular approach has been to use cartoon characters or animals in safety education for children in pre-school and Key Stage 1 and 2. Some authors advise strongly against using cartoon characters to represent concepts, especially with younger children. Wetton and McWhirter (1998) described a study where a cartoon character (Susy Sugar) represented the concept of sweetness and caused confusion in a programme designed to promote oral hygiene for 5-7 year olds.

Where animals represent children and model problem solving and safe behaviour, there may be some transfer of knowledge (Tamir et al 2003, Berry et al, 2006). However, the benefits depend more on the appropriateness of the information for the target group and on the quality of the teaching, than on the medium. The Tufty Club (RoSPA ca 1960- 1990) used such approaches to capture children's interest, but also engaged children and families in a wide range of road safety activities including practical road-side training.

However, direct experience of serious incidents or near misses do not of themselves lead to changed behaviour (Denscombe, 2001) suggesting experiential learning needs to be guided to be effective.

Alternatively, de Meyrick (2001) suggests health messages for adolescents should be targeted at more proximal impacts, such as drug addiction, rather than the distal longer-term outcomes, such as serious illness or death.

A normative approach (often included as part of a social influence approach) can be effective in delaying or preventing some risk behaviours in young people (Botvin et al, 1983; Foxcroft, 2003). Normative approaches use up to date and relevant data to demonstrate the actual behaviour of the target group and often challenge adolescent (and adult) misconceptions about the prevalence and acceptability of risk behaviours. For example, interventions which emphasise that most young people do not smoke or use illegal drugs or drink alcohol under age have been effective in sustaining healthy behaviour and in modifying behavioural intention in those who have embarked on risk taking (McBride, 2003).

Some normative approaches target the acceptability of healthy and safe behaviours, rather than their prevalence. For example demonstrating, through locally based surveys, that peers do not approve of drunken behaviour, can help to modify intentions to binge drink (Haines and Barker, 2003)

However, care needs to be taken with normative approaches. The data must come from a credible source since the approach may challenge strongly held, but misinformed, beliefs amongst adults as well as children. There is also potential to reinforce unhealthy or unsafe behaviours where these are actually more prevalent in a particular community or age group. Until recently these approaches have been evaluated mainly with older age groups and in the USA. The Blueprint project (Home Office 2002-7) is examining a broad spectrum of social influence, including normative, approaches in drug education and prevention for 11-13 year old pupils (Stead, Stradling, MacKintosh et al, 2007).

<u>Injury prevention</u>

We have seen that roadside training is most effective for teaching safe road crossing skills. Morrongiello and Lasenby (2006) also report that playground injuries can be prevented by actively supervising 4-6 year old children's play in a realistic setting. In this study, adults who rewarded children with a stamp for safe play reinforced children's safe behaviour. Changes persisted for 6 months after the intervention.

Normative pressure has been shown to be effective in modifying intention to wear seat belts in adolescents (Thuen and Rise, 1994). However, there is no evidence for injury prevention based on this approach.

<u>Personal safety</u>

Although normative approaches are recommended as part of a comprehensive anti-bullying policy, there is little evidence to support this approach specifically with respect to reducing the harm from bullying. Normative or social influencing approaches within anti-bullying programmes tend to focus on the unacceptability of bullying amongst peers, rather than the prevalence of bullying itself (Reid et al, 2004).

To date programmes aimed at preventing violence among young people or abuse by family and strangers have not used normative approaches. The focus has tended to be on campaigns to raise awareness of these behaviours the harm they cause to children and young people. These campaigns should be carefully balanced since they can create a social climate where violence and abuse are perceived to be more prevalent than they are, leading to fear and anxiety amongst children and families and restricting children's freedom of action. Several reports have highlighted these important but unintended consequences and the harm that this can cause (HTI, 2007, Audit Commission 2007).

Work in partnership

Develop links with supporting agencies such as police, fire and rescue, local authorities, and educational charities where these add value to work carried out in schools and other settings. Work with parents/carers and members of the wider community by seeking their views, providing information and guidance and involving them in developing and implementing solutions.

<u>Overview</u>

It is likely that where supporting agencies work within the framework of a whole school approach and contribute to a planned programme for PSHE, their work may add value to that being offered by school staff (ACPO, 2006). Safer Schools Partnerships exemplify this approach and the opportunities afforded by extended schools in England may also have an important contribution to make.

A recent review of the literature of the role of external contributors in school drug education found methodological weaknesses in many studies that claimed to demonstrate effectiveness (Buckley and White, 2007). While there was limited evidence for knowledge gain or change in behaviour or behavioural intention, pupils

reported that they enjoyed opportunities to hear from other agencies and these contributions were often memorable.

<u>Injury prevention</u>

Parents/carers
In the UK parents have been engaged actively with road safety education, in and out of school, through traffic clubs, pedestrian training and cycling proficiency training. As well as enhancing the pedestrian skills of the children, parents' skills have also been developed and some projects such as Kerbcraft have enabled parents to go on to employment (Towner, Whelan and Errington, 2007). Studies of parents' role in preventing injuries in the home have also highlighted the importance of active supervision by parents, especially for boys, who tend to approach more hazards and to be less compliant with instructions not to touch or to come away (Morongiello and Lasenby, 2006).

However, a recent report by the DfT (2007) appears to suggest that too close supervision by parents can have unintended consequences. In 2006, a parent survey revealed that fewer children aged 7-10 years in Great Britain were allowed to cross the road alone (down from 19% in 2002 to 14% in 2006). This has been linked by some commentators to an increase in deaths of children of the same age group on the roads in the same period from 10 to 18. Whether these two phenomena are causally related or not, it again raises concern that children may be overprotected from risk in our society and may therefore not have enough experience to keep themselves safe when necessary.

Both statutory and non-statutory agencies offer support to schools for injury prevention. In the UK every local authority has a road safety officer (RSO) and many of the resources they offer to schools are targeted at the skills needed by children as their road use changes, and have the potential to fit with a comprehensive health curriculum.

External providers
Safety education programmes offered by a range of external providers have been shown to increase knowledge and skills with respect to road crossing (Duperrex et al, 2002) cycling (RoSPA, 2001) and the prevention of poisoning (Liller et al, 1998). School-based injury prevention programs offered by external contributors and aimed at preventing a range of injuries include the "Lifeskills" programme (Oxford Evaluation Team (2003) , the Injury Minimisation Program for schools (IMPS) in the UK (Frederick and Barlow, 2006) and the "Risk Watch" program in the USA and Canada (Kendrick et al, 2007). These have all demonstrated improvements in knowledge, attitudes or self-reported safety behaviours. A recent evaluation of Risk Watch in the UK, has shown short term safety knowledge gains for children aged 7-10 years (ODPM, 2004).

Importantly for this review, the intervention is described as a comprehensive risk education programme, delivered by teachers who were trained by fire and rescue personnel. The programme focuses on practising making safer choices, resisting peer pressure to take risks and influencing family members and others to take action to reduce risks. However, the very comprehensiveness of such a large scale programme may be a problem for teachers who have to teach not just safety education, but a programme for the whole of PSHE.

<u>Personal safety</u>

Parents

Evidence suggests that parents do not always recognise the signs of bullying among children and that they report lower prevalence of bullying than their children (Reid et al, 2004). Strategies to help parents recognise and respond constructively to signs of bullying do not appear to have been evaluated. However, there are concerns that some interventions could inadvertently raise parents' anxiety and contribute to greater and greater restrictions on children's freedom to be physically active or play unsupervised (HTI, 2007).

Evidence from the USA suggests that parents are as effective as teachers in educating very young children (preschool) about personal safety (Wurtele, Gillespie, Currier et al, 1992; Wurtele, Kast and Melzer, 1992). The children, who were from low-income families, demonstrated greater knowledge of sexual abuse and higher levels of personal safety skills, persisting for at least 5 months. Teachers reported children were no more fearful and there were no additional increases in negative behaviours amongst the children who participated. The value of educating parents in child protection strategies and procedures has also been emphasised in a review by MacIntyre and Carr (2000).

External providers

External providers may contribute to helping children and young people to identify whether they are vulnerable to bullying, physical or sexual abuse. However, several sources suggest that these interventions should be part of a whole school, or whole community approach. This avoids suggesting that children and young people should take sole responsibility for keeping themselves safe, when they are most vulnerable (Wurtele and Owens, 1997; Moran, 1997; MacIntyre and Carr, 2000).

 In England, Safer Schools Partnerships, in which police officers are part of a whole school approach to promoting children's safety have shown promising results in reducing reports of bullying and helping children to feel safe while at school. SSPs have been targeted at schools in high crime areas and have contributed to reducing crime on school premises (Bowles et al, 2005).

Address known risk and protective factors

Risk and protective factors can be anything that is associated with a greater or lesser probability of a child or young person experiencing harm. Risk factors are not static and can be divided into several domains:
- *individual (e.g knowledge or skill)*
- *school (e.g. policy)*
- *peer group (e.g. attitudes)*
- *family e.g. (parental rules) and*
- *community (e.g. crime).*

An understanding of risk and protective factors can help those designing and delivering safety education resources to focus on wider aspects of injury prevention and personal safety.

Overview

Risk and protective factors are not always causally related to risk behaviour and are more often identified through correlational studies. For example, poor academic achievement has been found to be associated with earlier and riskier substance use

by young people. However, it is not clear whether poor achievement at school precedes or follows risky substance use.

Although they are by no means predictive of harm, the more risk factors a young person experiences, the more likely he or she will adopt a risky behaviour.   Studies suggest that some of the same risk factors underpin many different risk behaviours, so addressing risk factors may reduce a wide range of harm.

Protective factors are sometimes seen as the opposite of risk factors e.g. if having a parent who misuses drugs is a risk factor for drug misuse amongst children, then having parents who do not misuse drugs would seem to be a protective factor. However, this is not always the case. Protective factors, especially psychosocial factors such as resilience, help to explain why not all young people, even those who experience multiple risk factors, do not adopt harmful behaviours.

It is useful for those planning safety education interventions to consider the risk and protective factors that can be addressed through educational settings. However, it is not an easy matter to demonstrate that addressing these risk and protective factors have a direct impact on outcomes for young people.

Injury prevention

Since there is a range of settings for childhood accidents and a range of contributory causes, including the behaviour of adults as well as children, it is not possible to define clearly the risk factors for children and young people with respect to all non-accidental injury. Relative poverty seems to be a common factor associated with accidents at home, in play areas and on the road for children and young people. Children in Social Class V are 3.5 times more likely to be killed or seriously injured in a road accident than children in social classes I-III (DfT, 2006). However, some have questioned whether poverty is a remote or proximal risk factor i.e. whether poverty is itself a cause of accidents or whether this contributes to stress amongst parents, lower levels of parental supervision, greater exposure to hazards, lack of use or faulty safety equipment or other factors (Thomson et al, 2001). As we have seen, being a member of an ethnic minority community is also related to relative poverty and is risk factor for childhood accidents.

RoSPA has published a list of child- focused risk factors for home injuries, which include age, gender, developmental stage, stature, inexperience, 'bravado and horseplay'. Clearly only some of these factors are capable of being addressed by educational interventions, although being aware of broader determinants of accidents can help agencies and schools to target their resources to those most in need.

Personal safety

Risk factors for bullying and being bullied have been summarised in a fact sheet published by the University of Colorado (Centre for the study and Prevention of Violence http://www.colorado.edu/cspv/publications/factsheets/safeschools/pdf/FS-SC07.pdf).

Domain	Bullying	Being bullied
Individual	Impulsive, hot headed, dominant personality, lacking empathy Difficulty conforming to rules; low frustration tolerance Positive attitudes towards violence Physically aggressive Gradually decreasing interest in school achievement	Cautious, sensitive, insecure personality Difficulty asserting him/herself towards peers Physical weakness (especially in boys)
Family	Lack of parental warmth and involvement Overly permissive or excessively harsh discipline/physical punishment by parents Lack of parental supervision	Over-protection by parents (possibly)
Peer	Friends/peers with positive attitudes towards violence Exposure to models of bullying	Lack of close friends
School	Lack of supervision during breaks Unsupervised interactions between different year groups during breaks Indifferent or accepting attitudes of teachers towards bullying Indifferent or accepting attitudes of peers towards bullying Inconsistent application of the rules about bullying	Presence of aggressive pupils in same or close age group Indifferent or accepting attitudes of teachers towards bullying Indifferent or accepting attitudes of peers towards bullying Inconsistent application of the rules about bullying

We have seen that whole school approaches are most effective in reducing bullying, but an examination of these risk factors suggests that schools which engage with, and offer support for, better parenting may also make a positive contribution to reducing the harm from bullying.

Risk and protective factors for violence amongst young people have been published in a report of the Surgeon General in the USA (Satcher, 2001) following the murder of students at Columbine High School in 1999.

| Domain | Risk Factor | | Protective Factor* |
	Early Onset (age 6–11)	Late Onset (age 12–14)	

Individual	General offenses
	Substance use
	Being male
	Aggression**
	Psychological condition
	  Hyperactivity
	Problem (antisocial)
	  behavior
	Exposure to television
	  violence
	Medical, physical
	Low IQ
	Antisocial attitudes, beliefs
	  Dishonesty**
		General offenses
		Psychological condition
		  Restlessness
		  Difficulty concentrating**
		  Risk taking
		Aggression**
		Being male
		Physical violence
		Antisocial attitudes, beliefs
		Crimes against persons
		Problem (antisocial) behavior
		Low IQ
		Substance use
			Intolerant attitude toward
			  deviance
			High IQ
			Being female
			Positive social orientation
			Perceived sanctions for
			  transgressions

Family	Low socioeconomic
	  status/poverty
	Antisocial parents
	Poor parent-child relations
	  Harsh, lax, or inconsistent
	  discipline
	Broken home
	  Separation from parents
	Other conditions
	Abusive parents
	  Neglect
		Poor parent-child relations
		  Harsh, lax discipline; poor
		  monitoring, supervision
		Low parental involvement
		Antisocial parents
		Broken home
		Low socioeconomic
		  status/poverty
		Abusive parents
		Other conditions
		  Family conflict**
			Warm, supportive
			  relationships with
			  parents or other adults
			Parents' positive
			  evaluation of peers
			Parental monitoring

School	Poor attitude, performance	Poor attitude, performance
		  Academic failure
			Commitment to school
			Recognition for
			  involvement in
			  conventional activities

Peer Group	Weak social ties Antisocial peers	Weak social ties Antisocial, delinquent peers Gang membership	Friends who engage in conventional behavior
Community		Neighborhood crime, drugs Neighborhood disorganization	

* Age of onset not known.
** Males only.

Most violence prevention programmes operate at the individual level, but as we have seen, some have also addressed parenting and community wide factors. Ialongo et al (1999) focussed their intervention on teacher management of classroom behaviour and on improving language, arts and maths skills. Although this was a universal programme which was associated with overall behavioural improvements for boys and girls, boys with aggressive behaviour showed particular benefit. The classroom intervention was compared with a family-school partnership approach, which was successful in engaging parents, but parents of low achieving students were least likely to participate.

Risk factors for physical and sexual abuse of children can also operate at community, family and individual levels (Bethea, 1999).

Domain	Risk factor
Community/societal	High crime rate • Lack of or few social services • High poverty rate • High unemployment rate
Parent-related	• Personal history of physical or sexual abuse as a child • Teenage parents • Single parent • Emotional immaturity • Poor coping skills • Low self-esteem • Personal history of substance abuse • Known history of child abuse • Lack of social support • Domestic violence • Lack of parenting skills • Lack of preparation for the extreme stress of having a new infant • History of depression or other mental health problems • Multiple young children • Unwanted pregnancy • Denial of pregnancy
Child-related	• Prematurity • Low birth weight • Handicap

It can be seen that most of the risk factors are associated not with victims but with the perpetrators, making child abuse prevention less susceptible to interventions aimed primarily at children.

Address psychosocial aspects of safety e.g. confidence, resilience, self esteem, self efficacy

Psychosocial risk and protective factors are individual characteristics that may predispose children to injury, or to being a victim of bullying, violence or abuse. Psychosocial aspects of behaviour operate dynamically with environmental factors, reinforcing the importance of incorporating individual protective factors (such as confidence, resilience, self esteem, self efficacy) within a whole school, whole community approach.

6.

Overview

Like other individual factors such as age or gender, some psychosocial factors are not susceptible to modification by educational means, although they should be taken into account when planning. Some psychosocial factors are more appropriately addressed through the involvement of non-teaching professionals such as health workers.

Others, such as self esteem are thought to be relatively stable and thus only susceptible to modification through long term and sustainable efforts. According to social cognitive theory, behaviour is shaped by the interaction between the environment and psychosocial factors, reinforcing the importance of incorporating these approaches within a whole school, whole community approach

Psychosocial factors have long been recognised as important to help children and young people keep themselves healthy and safe. However, evidence of causality (e.g. that high self esteem prevents risk taking or raising self esteem results in greater health protective behaviours) has not been forthcoming. Attention has also focused on self efficacy which is the extent to which a person feels able to carry out an intention. Self efficacy can be affected by perceived social norms as well as environmental barriers.

Most recently researchers have become interested in resilience as a mediator of positive health behaviours (Grunstein and Nutbeam, 2007). Personality traits of resilient people include social competence, autonomy, a sense of purpose and a sense of belonging (Henderson and Milstein, 1996). Resilience was identified as an important psychosocial factor in studies of children, who despite experiencing many environmental risk factors did not themselves misuse substances. It has also been identified as an important factor in children who cope relatively well with long term chronic illness such as asthma (Vinson, 2002). Resilient individuals use problem solving skills, express and manage their emotions, use appropriate social skills and set achievable goals (Resnick et al 2007).

Grunstein and Nutbeam (2007) examined resilience in young people taking part in the rock challenge, a performing arts competition for secondary schools in Australia and found there was a positive association between resilience and health protective behaviours such as not smoking, not having been drunk and not using cannabis. However, methodological problems meant the authors were not able to state with confidence if the intervention mediated the health protective behaviour or if resilient individuals self selected for participation in the challenge.

As might be expected, resilience can be influenced by parenting styles, but a recent study of health promoting schools has suggested that the school is also an important setting for encouraging the development of resilience (Sun and Stewart, 2007).

This review has not identified any interventions which seek specifically to develop psychosocial protective factors in injury prevention, or in the promotion of personal safety.

Adopt positive approaches which model and reward safe behaviour, within a safe, supportive environment

It is helpful to identify the short and long-term benefits of maintaining safe and healthy behaviour, and of modifying behaviour that is harmful to health. Children and adults learn from observing and modelling the behaviour of others, including peers, and generalise their expectation of positive outcomes across different domains.

Overview

A corner stone of health promotion is to identify the benefits of maintaining safe and healthy behaviour, or of modifying behaviour that is harmful to health. Positive approaches may also go some way to overcoming concerns about shock horror tactics and overprotection of children. Behavioural science suggests that children and adults learn from observing and modelling the behaviour of others, and generalise their expectation of positive outcomes across different domains. Thus, a child who is rewarded for following rules for keeping safe in one setting could be expected to follow similar rules in an alternative setting (but only where the rules are made explicit).

Healthy schools seek to create an environment in which children and young people can discuss their concerns and receive constructive support. Research by Warwick et al (2004) found evidence for this in both primary and secondary schools taking part in NHSS.

Guidance on drug education and sex and relationships education from DCSF both emphasise the importance of creating a climate in the classroom where pupils can discuss sensitive issues.

Injury prevention

One example of the effectiveness of modelling and rewarding safe behaviour in injury prevention comes from a study aimed at increasing supervision by staff, monitoring children aged 4-6 years in the playground (Morrongiello and Lasenby 2006). Adults were encouraged to engage with children during their play and to reward safe play. Injuries were reduced during the intervention and changes persisted for 6 months.

Personal safety

A safe and supportive environment is essential if young people are going to feel able to report bullying. It is interesting to note that a number of studies of anti-bullying programmes show an increase in reports of bullying, at least in the initial period. Children are also more likely to report bullying behaviour in anonymous surveys.

This suggests that as well as raising awareness of the nature of bullying, effective anti-bullying interventions create the kind of climate where it is 'OK' to report both being a bully and being bullied (Smith, Peplar and Rigby, 2004).

The DARE Plus programme was a whole school, whole community project which focussed on the benefits of being non-violent in solving disputes (Komro et al 2004). It included work with parents, peer led approaches and after school activities planned by the pupils to create a safer neighbourhood. Girls and boys reported lower expectations of victimisation and boys were able to give more reasons to be non-violent.

In the US, where bullying has been linked to incidents of extreme violence, approaches based on 'humanising' the school environment are more effective than a high visibility security system in preventing violence and disorder (Werle, 2006).

Reflections

While a list of principles suggests a linear model of safety education, the evidence reviewed for this report suggests there are many overlaps between different principles.
Thus, the role of the principles in effective safety education may be better represented by the model shown in Figure 1.

Figure 1: How the principles of safety education might interact with one another
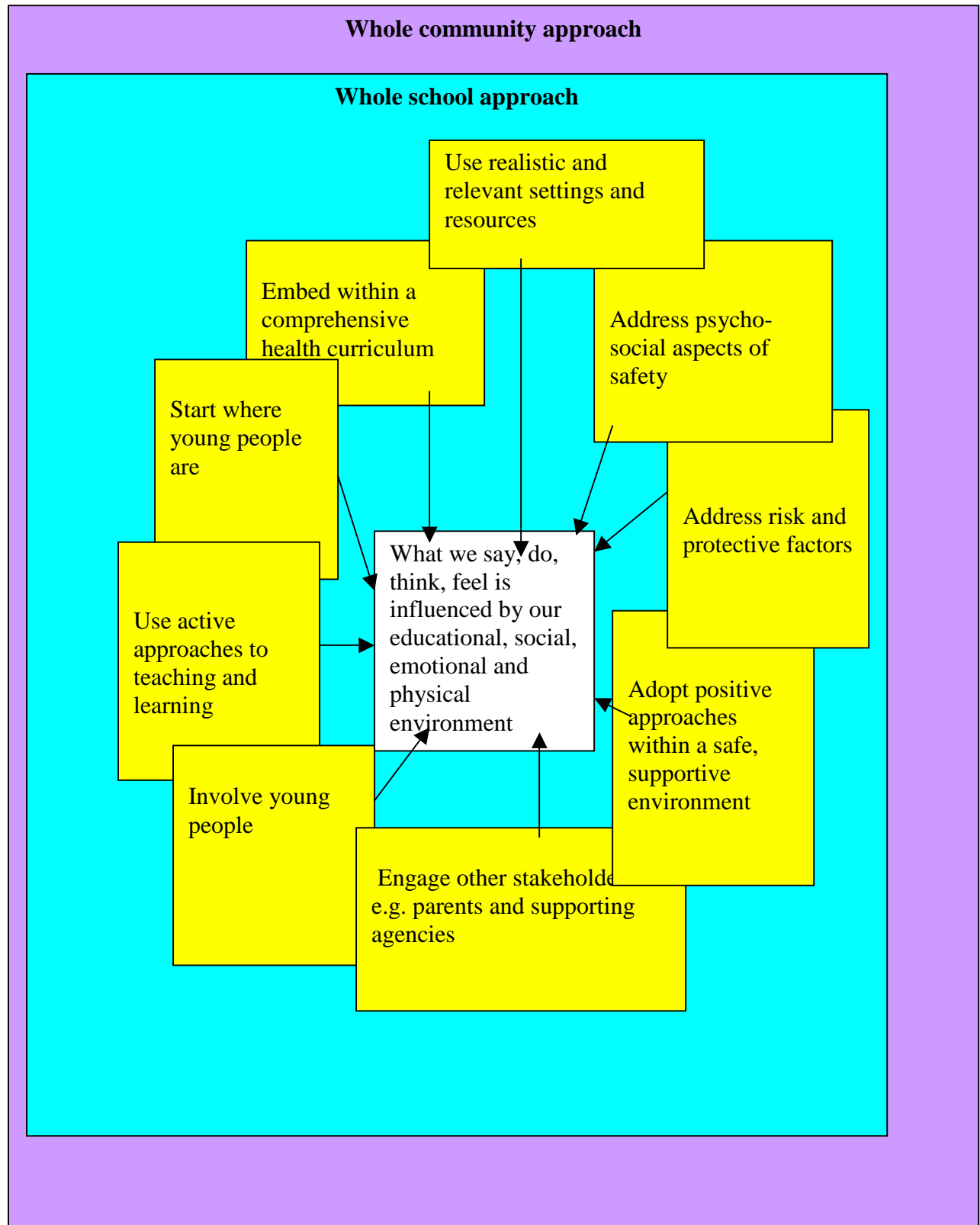
education in schools and the importance of a clear theoretical basis for interventions aimed at helping children to stay safe.

The role of teachers
It is clear that external providers cannot deliver effective safety education based on all the principles outlined above. At the very least, effective safety education requires strong leadership and good co-ordination across a whole school. Ofsted reports on PSHE have confirmed that the best quality PSHE lessons observed during their inspections were delivered by teachers with a clear responsibility for PSHE and who have received some training for their role (Ofsted 2002, 2005). Ofsted also recommends that PSHE in secondary education is delivered as a subject within the curriculum, rather than during tutor time. The DCSF has funded continuing professional development for teachers in PSHE, focussing on sex and relationships education, drug education and more recently education for mental and emotional well-being. Perhaps it is time to consider a fourth option, safety education, made available to teachers and other providers, enabling all those who work in this important field to be well informed about effective practice.

Theoretical underpinning
Much of the strongest evidence for effectiveness for safety education reviewed in this document was achieved by projects that had a clear model for safety education at their heart. Various models exist (see Gielen, Sleet and DiClemente, 2006 for an overview). Those developing resources for use in schools are strongly recommended to consider these models, alongside the principles outlined here.

And finally:

It is important to recognise the place of evidence in making decisions about the allocation of resources for safety education and the benefits of sensible risk taking for the development of the whole person. While this review seeks to underpin the principles of safety education with evidence from respected sources, safety education based on principles alone would be sterile, without a recognition of the values underpinning safety education. These values include respect for:
- all human life,
- the rights of children and young people to live safely and confidently in a changing world,
- the rights of children and young people to have a say in the decisions which are made about their safety
- the rights of children to make informed choices about the risks they take

And
the responsibility of families, schools and communities to provide:
- opportunities for children to make informed choices
- opportunities for children to discover their physical and emotional capabilities through play and exploration
- a safe, secure environment in which children can grow and develop.

Appendix 1

Table 1: Principles of effective safety education

Encourage the adoption of, or reinforce, a whole school approach, within the

wider community

Resources may deliver all or part of whole school approach and should encourage or reinforce a whole school approach. A whole school approach encompasses the formal and informal curriculum, policy (both as written and as implemented) and the relationships among staff, pupils, parents, carers, with other agencies and with the wider community.

Use active approaches to teaching and learning (including interactive and experiential learning)

Active approaches to teaching and learning include all strategies in and out of the classroom where the learner:

seeks out information for him or herself,

develops a physical skill,

engages in discussion about a topic in pairs or groups (interactive learning),

is engaged in problem solving independently or in a group,

adopts a role, or considers an issue from someone else's viewpoint.

Active learning may draw on the learner's personal experience (experiential learning.) A resource should describe how to manage the classroom climate e.g. using ground rules, using distancing techniques.

Involve young people in real decisions to help them stay safe

Involving young people includes young people's participation in real decisions about keeping themselves safe, in and out of the classroom. Young people may be involved in designing or participating in surveys, participating in their school council, choosing which activities they want to take part in outside the formal curriculum, in peer education projects, in mentoring or peer support. Activities for young people should include identification of hazards, participating in risk assessment (e.g. assessing whether risks are trivial, tolerable or intolerable) and being part of actions to control or manage risk to themselves and others.

Assess children and young people's learning needs

Local and national evidence can help to identify factors that suggest children of a particular age or group are at risk. Teaching and learning strategies to address these needs should reflect the age and developmental stage of the learner, take account of social and cultural needs and the effects of gender on safety related behaviour and learning. Strategies to assess learning needs can involve open ended forms of questioning, whether through informal discussion, mind mapping, brain-showers and circle time. They may also include more structured formats, such as surveys, focus group discussions, interviews or 'draw and write' activities.

Teach safety as part of a comprehensive personal social and health curriculum

A comprehensive personal social and health curriculum (do we need a footnote re secondary curriculum change) helps children and young people learn how to keep themselves healthy <u>and</u> to stay safe. It provides opportunities to learn specific and transferable skills and knowledge in a wide range of circumstances, but with attention to feelings, skills, attitudes, values and attributes. Topics should be introduced in the early years at school and extended and revisited throughout the key stages, introducing more specific language, knowledge and skill as the child develops (spiral curriculum). A comprehensive personal social and health curriculum will offer pupils a specific time and place to learn about being healthy and staying safe (such as dedicated PSHE time) but will also be cross curricular, drawing on different programmes of study (e.g. maths, English, science, drama) to help young people access and use relevant information.

Use realistic and relevant settings and resources

Real life data and examples (but not those designed simply to shock) help to engage young people and to challenge misconceptions e.g. 'bullying is acceptable behaviour among children' or 'accidents just happen' where necessary. (Using data in this way is also known as a normative approach).

Work in partnership

Develop links with supporting agencies such as police, fire and rescue, local authorities, and educational charities where these add value to work carried out in schools and other settings. Work with parents/carers and members of the wider community by seeking their views, providing information and guidance and involving them in developing and implementing solutions.

Address known risk and protective factors

Risk and protective factors can be anything that is associated with a greater or lesser probability of a child or young person experiencing harm. Risk factors are not static and can be divided into several domains:

- *individual (e.g knowledge or skill)*
- *school (e.g. policy)*
- *peer group (e.g. attitudes)*
- *family e.g. (parental rules) and*
- *community (e.g. crime).*

An understanding of risk and protective factors can help those designing and delivering safety education resources to focus on wider aspects of injury prevention and personal safety.

Address psychosocial aspects of safety e.g. confidence, resilience, self esteem, self efficacy

Psychosocial risk and protective factors are individual characteristics that may predispose children to injury, or to being a victim of bullying, violence or abuse. Psychosocial aspects of behaviour operate dynamically with environmental factors, reinforcing the importance of incorporating individual protective factors (such as confidence, resilience, self esteem, self efficacy) within a whole school, whole community approach.

Adopt positive approaches which model and reward safe behaviour, within a safe, supportive environment

It is helpful to identify the short and long-term benefits of maintaining safe and healthy behaviour, and of modifying behaviour that is harmful to health. Children and adults learn from observing and modelling the behaviour of others, including peers, and generalise their expectation of positive outcomes across different domains.

References:

Association of Chief Police Officers (2006) *Joining Forces. Drugs: guidance for police working with schools and colleges*

http://www.drugscope.org.uk/NR/rdonlyres/56C84153-F8FE-4079-AE06-2840427F41DA/0/acpomain.pdf

Adams, P. (2003) 'Health education: part or all of the PSHE and Citzenship framework?' *Health Education* **103**(5) 272-277

Arnett, J.J. (2002) 'Developmental sources of crash risk in young drivers' In: *Injury Prevention* **8** 17-23

Audit Commission (2007) *Better safe than sorry*

Berry, D.S. and Romo, C.V. (2006) 'Should 'Cyrus the Centipede' take a hike? Effects of exposure to a pedestrian safety program on children's safety knowledge and self reported behaviours' *Journal of Safety Research* **37** 333-341

Bethea, L. (1999) 'Primary prevention of child abuse' *American Family Physician* March 15th 1999 http://www.aafp.org/afp/990315ap/1577.html (last accessed 23.11.2003)

Blake, S. (2005) 'Health education and young people: It's time to join up' *Health Education* **105**(4) 245-248

Botvin, G.J., Renick, N.L., and Baker E. (1983). 'The effects of scheduling format and booster sessions on a broad-spectrum psychosocial smoking prevention program' *Journal of Behavioral Medicine,* **6** *359-379*

Bowles, R. A, Garcia Reyes M, Pradiptyo R. (2005) Safer Schools Partnerships *Youth Justice Board for England and Wales http://www.yjb.gov.uk/Publications/Scripts/prodView.asp?idproduct=268&eP=* London: YJB Publication

Buckley, E.J. and White, D.G. (2007) 'Systematic review of the role of external contributors in school substance use education' *Health Education* **107**(1) 42-62

Carney, A.G. and Merrell, K.W. (2001) 'Bullying in schools: perspectives on understanding and preventing an international problem' *Social Psychology International* **22**(3) 364-382

Cawson (2000) *Child maltreatment in the United Kingdom: a study of the prevalence of child abuse and neglect* (NSPCC: London)

Centre for the Study and Prevention of Violence, University of Colorado *Bullying Prevention: An overview of bullying* http://www.colorado.edu/cspv/safeschools/bullying/overview.html (last accessed 20.11.07)

Cooper, V. (2005) 'Imbalance of power: bullying in our schools' *Childright*, **218** (Jul/Aug)

Cowie, H. (2000) 'Bystanding or standing by: gender issues in coping with bullying in English schools' *Aggressive Behaviour* **26** 85-97

Cowie, H and Wallace,P. (2002) *Peer Support in Action* London: Sage

Cowie, H. and Hutson, N. (2005) 'Peer support: a strategy to help bystanders challenge school bullying' *Pastoral Care in Education* **23(**2) 40-44

Cross, D., Pintabona, Y., Hall, M., Hamilton, G. and Erceg, E. 'Validated Guidelines for School-Based Bullying Prevention and Management' *International Journal of Mental Health Promotion* **6**(3) 34-42

Davis, K.M. and Gidycz, C.A. (2000) 'Child sexual abuse programmes: A meta-analysis' *Journal of Clinical Child Psychology* **29**(2) 257-265

Denscombe, 2001 'Critical incidents and the perception of health risks: the experiences of young people in relation to their use of alcohol and tobacco' *Health Risk and Society* **3** (3) , 293 – 306

de Meyrick, J. (2001) 'Forget the 'blood and gore': an alternative message strategy to help adolescents avoid smoking' *Health Education* **102**(3) 99-107

Department for Education and Skills (2001) *Safety education: Guidance for Schools* http://www.teachernet.gov.uk/_doc/1314/Safety_Guidance_leafletv2.pdf

Department for Education and Skills (2002) *Don't Suffer in Silence*

Department for Education and Skills, Home Office, Association of Chief Police Officers (2004) *Crime recording by police officers working in schools*

Department of Health (2004) *Choosing health? Resource pack*

Department for Transport, Scottish Executive, Welsh Assembly (2006) *Road Casualties Great Britain, 2005*

Department for Transport (2007) *National Travel Survey: 2006*

Dragutinovic, N. and Twisk ,D. 2006 *The effectiveness of road safety education* Institute for Road Safety Education Leidschendam : SWOV

DrugScope (2006) *Gender and drug education: a briefing paper for practitioners* http://www.drugscope.org.uk/NR/rdonlyres/F00A6FD8-A855-4E8B-8AEB-5DD9C8BF4F40/0/genderbriefing.pdf (last accessed 22.11.2007)

Dunbar, G., Lewis, V. and Hill, R. (1999) 'Control processes and road crossing skills' T*he Psychologist* **12**(8) 398-399

Dunbar, G., Lewis, V. and Hill, R. (2001) 'Children's attentional skills and road behaviour' *Journal of experimental psychology: Applied* **7** 227-234

Duperrex, O. Bunn, F. and Roberts, I (2002) 'Safety education of pedestrians for injury prevention: a systematic review of randomised controlled trials'. *British Medical Journal* **324** 1129-1131

Evans, D. and Norman, P. (2002) 'Improving pedestrian road safety among adolescents: An application of the theory of planned behaviour' in Rutter, D, and Quine, L. eds *Changing Health Behaviour* Open University Press: Buckingham

Farley, C., and Vaez, M. and Laflamme, L. (2004) 'Does promoting bicycle-helmet wearing reduce childhood head injuries?' *Health Education* **104**(5) 290-303

Foot, H., Tolmie, A., Thomson, J., McLaren, B. and Whelan, K. (1999) 'Recognising the hazards' *The psychologist'* **12**(8) 400-402

Foxcroft, D.R. (2003) *Alcohol misuse prevention for young people: psychosocial and educational interventions* London: Alcohol Concern
http://www.alcoholconcern.org.uk/servlets/doc/624 (last accessed (21.11.2007)

Frederick, K. and Barlow, J. (2006) 'The Citizenship Safety project: a pilot study' *Health Education Research* **21**(1) 87-96

Freeman, R. and Bunting, G. (2003) 'A child-to-child approach to promoting healthier snacking in primary school children: a randomised trial in Northern Ireland' *Health Education* **103**(1) 17-27

Girasek, D. (2006) in Gielen, A.C., Sleet, D.A. and DiClemente, R.J. eds (2006) *Injury and Violence Prevention: Behavioural Science Theories, Methods and Applications* (San Francisco: Jossey-Bass)

Gielen, A.C., Sleet, D.A. and DiClemente, R.J. (2006) *Injury and Violence Prevention: Behavioural Science Theories, Methods and Applications* (San Francisco: Jossey-Bass)

Goren, N. and Wright, K. 'Peer education as a drug prevention strategy' *Prevention Research Quarterly Victoria: DrugInfo Clearing House* **17** March, 2006)

Global Road Safety Partnership (GRSP) (2001) *Road safety education: saving young lives and limbs* Geneva: GRSP
http://www.grsproadsafety.org/themes/default/pdfs/Road%20safety%20education%20in%20schools.pdf (last accessed 21.11.2007)

Grunstein, R. and Nutbeam, D. (2007) 'The impact of participation in the Rock Eisteddfod Challenge on adolescent resiliency and health behaviours' *Health Education* **107**(3) 261-275

Haines, M. and Barker, G. (2003) 'The NIU Experiment: A Case Study of the Social Norms Approach' in *The Social Norms Approach To Preventing School And College Age Substance Abuse: A Handbook For Educators, Counsellors and Clinicians*, Ed. H. Wesley Perkins. San Francisco: Jossey-Bass.

Henderson, N. and Milstein, M. (1996*) Resiliency in schools: making it happen for students and educators* Thousand Oaks, CA: Sage publications

Home Office (2003) *Criminal Statistics England and Wales 2002*

Home Office (2006) *Young People and Crime: Findings from the 2005 Offending, Crime and Justice Survey Home Office Statistical Bulletin 17/06.*

Home Office, CSIP, NIMHE and DH (2006) *The needs and effective treatment of young people who sexually abuse: current evidence.*

HTI (2007) *Cotton Wool Kids: Releasing the potential for children to take risks and innovate* Issues, Paper 7 London: HTI

Hudson, D., Zimmerman, M. and Morrel-Samuels, S. (2006) 'Youth violence prevention' in Gielen, A.C., Sleet, D.A. and DiClemente, R.J. (2006) *Injury and Violence Prevention: Behavioural Science Theories, Methods and Applications* (San Francisco: Jossey-Bass)

Hunt, C. (2007) 'The effect of an education program on attitudes and beliefs about bullying and bullying behaviour in junior secondary school students' *Child and Adolescent Mental Health* **12**(1) 21-26

Ialongo, N.S., Werthammer, L., Kellam, S.G., Bron, C.H., Wang, S. and Lin,Y. (1999) 'Proximal impact of two first-grade preventive interventions on the early risk behaviours for later substance abuse, depression, and anti-social behaviour' *American Journal of Community Psychology* **27**(5) 599-641

James, D.J., Lawlor, M., Flynn, A., Murphy, N., Courtney, P. and Henry, B. (2006) 'One school's experience of engaging with a comprehensive anti-bullying programme in the Irish context: adolescent and teacher perspectives' *Pastoral care in education* **24**(4) 39-47

Johnson, B (1997) 'The limits of personal safety education: insights from an Australian Study' *Journal of Child Centred Practice* **4**(1)

Kendrick, D., Groom, L., Stewart, J., Watson, M., Mulvaney, C., and Casterton, R. '"Risk Watch": Cluster randomised controlled trial evaluating an injury prevention program' *Injury Prevention* 2007;**13**:93-99

Knight, C. (2007) 'A resilience framework: perspectives for educators' *Health Education* **107**(6) 543-555

Komro, K.A., Perry, C.L., Veblen-Mortenson, S., Stigler, M..H.,. Bosma, L. M., . Munson, K.A. and Farbakhsh, K. (2004) 'Violence-Related Outcomes of the D.A.R.E. Plus Project' *Health Education and Behaviour* **31** 335-354.

Krug, E.G., Dahlberg, L.L., Mercy, J. A., Zwi, A.B. and Lozano, R. (2002) *World report on violence and health.* Geneva: World Health Organisation

Liller, K.D., Craig, J., Crane, N, and McDermott, R.J. (1998) 'Evaluation of a poison prevention lesson for kindergarten and third grade students' *Injury Prevention* **4** 218–21

McBride, N. (2003) 'A systematic review of school drug education' Health Education Research **18**(6) 729-742

McDonald, J., Roche, Durbridge, M. and Skinner,2003) *Peer Education: evidence to practice*, Adelaide: National Centre for Education and Training on Addiction

MacIntyre, D. and Carr, A. (2000) 'Prevention of child abuse: implications of programme evaluation research' *Child Abuse Review* **9** 183-199

McVeigh, C. Hughes, K., Bellis, M.A., Reed, E., Ashton, J.R. and Syed, Q. (2005) *Violent Britain: People, prevention and public health* Centre for Public Health Liverpool: Liverpool John Moores University

McWhirter J (1994) 'Children's perceptions of risk' in Proceedings of the British Health and Safety Society Conference: Safety Education *Journal of Health and Safety* **10**   p21-29

McWhirter, J.M. and Weston, R. (1994) 'Sharks, cliffs and jagged rocks: Children's concepts of risk' *Health Education* (March - 2) 8-11

McWhirter, J.M. (1997) '*Spiralling into control: A review of the development of children's understanding of safety related concepts*' Birmingham: Royal Society for the Prevention of Accidents

McWhirter J (1998) 'Risk assessment in the National Curriculum' In: Proceedings of the British Health and Safety Society Conference: Risk Assessment *Journal of the British Health and Safety Society.*

McWhirter, J. (2002) *'It makes you feel how it is' An evaluation study of S'cool to be safe: On the road. A theatre in education project* Birmingham: Royal Society for the Prevention of Accidents

McWhirter, J.M. and South, N. (2004) *Young people and Risk* Report for Government Office East

Menesini, E., Eslea, M., Smith, P.K. Genta, M.L., Giannetti, E., Fonzi, A. and Costabile, A. (1997) 'A cross national comparison of children's attitudes towards bully/victim problems in school *Aggressive Behaviour* **23** 245-257

Moran, E., Warden, D., Macleod, L., Mayes, G. and Gillies, J. (1999) 'Stranger-danger: what do children know?' *Child Abuse Review* **6**(1) 11-23

Morrongiello, B.A. and Lasenby, J. (2006) 'Supervision as a behavioural approach to reducing child injury risk' in Gielen, A.C., Sleet, D.A. and DiClemente, R.J. (2006) *Injury and Violence Prevention: Behavioural Science Theories, Methods and Applications* (San Francisco: Jossey-Bass)

Ngwe, J.E., Liu, L.C., Flay, B.R., Segawa, E., and Aya, A. (2004) 'Violence prevention among African American adolescent males' *American Journal of Health Behaviour* **28** (Suppl 1) 824-837

Office of the Deputy Prime Minister (2004) *Risk Watch: Findings from a plot study in the UK:* London

Ofsted (2002) *Secondary Subject Reports*: *PSHE 2000-2001*

Ofsted (2005) *Personal, Social and Health Education in Secondary Schools*

Odea, J. (2005) 'School based health education strategies for the improvement of body image and prevention of eating problems: an overview of safe and successful interventions' *Health Education* **105**(1) 11-33

Olweus, D. (1993) *Bullying at school: what we know and what we can do* Oxford: Balckwell

Olweus, D., Limber, S. and Mihalic, S. F. (1999) *Blueprints for Violence Prevention. Book Nine: Bullying Prevention Program.* Boulder, CO: Center for the Study and Prevention of Violence.

Olweus, D (1999) 'Sweden' in Smith, P.K. Morita, Y., Junger-Tas, D., Olweus, R., Catalano, R. and Slee, P. (Eds) *The nature of school bullying: a cross national perspective* London: Routledge

Olweus, D. and Endresen, I.M. (1998) 'The importance of sex stimulus object: age trends and sex differences in empathic responses

Orme, J. and Salmon, D. (2002) 'Child protection drama in primary school – an effective approach?' *Health Education* **102**(4) I87-195

Oxford Evaluation Team (2003) *An evaluation at the Lifeskills Learning for Living Programme* Research Report **187** London: Health and Safety Executive

Pepler, D., Smith, P.K. and Rigby, K. (2004) 'Looking back and looking forward: implications for making interventions work effectively' in Smith, P.K., Pepler, D., and Rigby, K. Eds *Bullying in schools: how successful can interventions be?* (2004) Cambridge University Press: Cambridge

Plant, M. and Plant, M (1992) *Risk Takers: Alcohol, drugs, sex and youth* London: Routledge

Powney, J., Glissov, P. and Hall, S. (1995) *The use of theatre tours in road safety education: drinking, driving and young people* Scottish Council for Research in Education

Qualifications and Curriculum Authority *End of Key Stage Statements for PSHE* http://www.qca.org.uk/qca_7187.aspx

Reed, D.B., Kidd, P.S., Westneat, S.C., and Rayens, M.K. (2001) 'Agricultural Disability Awareness and Risk Education (AgDARE) for high school students' *Injury Prevention, 7*(s), i59-i63

Reid, P., Monsen, J and Rivers, I. (2004) 'Psychology's contribution to understanding and managing bullying within schools' *Educational psychology in practice* **20**(3) 241-258

Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., Jones, J. Tabor, J. et al. (2007) 'Protecting adolescents from harm. Findings from the National Longitudinal Study on Adolescent Health' *The Journal of Early Adolescence* **278**(10) 4-39

Rigby, K., Smith, P.K. and Pepler, D (2004) 'Working to prevent school bullying' in Smith, P.K., Pepler, D., and Rigby, K. Eds *Bullying in schools: how successful can interventions be?* (2004) Cambridge: Cambridge University Press

RoSPA (2001) *The effectiveness of cyclist training* Birmingham: Royal Society for the Prevention of Accidents

Royal Society for the Prevention of Accidents *Why do children have accidents?* http://www.rospa.com/homesafety/advice/child/accidents.htm (last accessed 23.11.2007)

Satcher, D. (2001) *Youth Violence: Report of the Surgeon General, USA*
http://www.surgeongeneral.gov/library/youthviolence/toc.html (last accessed
23.11.2007)

Smith, P.K., Peplar, D. and Rigby, K. (Eds) (2004) *Bullying in Schools: How successful can interventions be?* (Cambridge: Cambridge University Press)

Spinks, A., Turner, C., McClure, R., Acton, C., and Nixon, J. (2005) 'Community based programmes to promote use of bicycle helmets in children aged 0-14 years: a systematic review.' *International Journal of Injury Control and Safety Promotion* **12**(3) 131-142

Stead, M., Straddling, R., MacKintosh, A.M., MacNeil, M., Minty, S., Eadie, D. et al (2007) *Delivery of the Blueprint Programme* Institute of Social Marketing, University of Stirling http://drugs.homeoffice.gov.uk/publication-search/blueprint/dpreports/blueprintdelivery.pdf?view=Binary (last accessed 17.01.08)

Stewart-Brown, S. (2006) *What is the evidence on school health promotion in improving health or preventing disease and, specifically, what is the effectiveness of the health promoting schools approach?* Copenhagen, WHO Regional Office for Europe (Health Evidence Network report; http://www.euro.who.int/document/e88185.pdf (last accessed 21.11.2007).

Sun, J. and Stewart, D. (2007) 'How effective is the health promoting school approach in building social capital in primary schools?' *Health Education* **107**(6) 575-599

Takriti, R., Lee, A.J. and Mann, N.P. (2001) 'Teenage attitudes to bicycle helmets' *Health Education* **101**(4) 169-175

Tamir, D., Shabtai, A., Weinstein, R., Dayan, I., Avraham, M. and Tamir, M (2003) 'Television entertainment and health education for children in Israel' *Health Education* **103**(4) 245-253

Tobler, N., Lessard, T., Marshall, D., Ochshorn, P. and Roona, M. (1999) 'Effectiveness of school-based drug prevention programs for marijuana use' *School Psychology International*, **20**, 105–137

Tobler, N.S., Roona, M.R., Ochshom, P., Marshall, D.G., Streke, A.V. and Stackpole, K.M. 'School-Based Adolescent Drug Prevention Programs: 1998 Meta-analysis' *Journal of Primary Prevention,* 20(4): 275–336, 2000.

Tolmie, A., Thomson, J.A.,Foot, H.C., Whelan, K., Morrison,S. and McLaren, B. (2005) 'The effects of adult guidance and peer discussion on the development of children's representations: evidence from the training of pedestrian skills' *British Journal of Psychology* **96**(2) 181-204

Tolmie, A. (2007) 'Using peer education in road safety provision' *Proceedings: 72nd RoSPA Road Safety Congress http://www.rospa.com/roadsafety/conferences/congress2007/info/andrew_tolmie.pdf (last accessed 21.11.2007)*

Thomson, J.A., Tolmie, A.K. and Mamoon, T.P. (2001) *Road accident involvement from ethnic minorities: a literature review* Road Safety Research Report **19** London: Department for Transport

Thornton, S. Pearson, A., Andree, K. and Rodgers, N. (1999) 'Taking the child's perspective seriously' *The Psychologist* **12**(8) 393-394

Thuen, F. and Rise, J. (1994) 'Young adolescents' intention to use seat belts: the role of attitudinal and normative beliefs' *Health Education. Research* **9** 215-223

Towner, E., Dowswell T., Mackereth C. and Jarvis S (2001). *What works in preventing unintentional injuries in children and young adolescents? An updated systematic review.* London: Health Development Agency.

Towner, E., T. Dowswell, M. Burkes, H. Dickinson, J. Towner and M. Hayes (2002). *Bicycle Helmets - A review of their effectiveness: A critical review of the literature.* London: Department for Transport.

Towner, E.and Errington G (2004) *How can injuries in children and older people be prevented?* Copenhagen, WHO Regional Office for Europe (Health Evidence Network report: http://www.euro.who.int/Document/E84938.pdf).

Towner, E., Whelan, K. and Errington, G. (2007) Evaluation of UK national network of child pedestrian training pilot: hat has been the impact on school communities and volunteers? *Proceedings: 72nd RoSPA Road Safety Congress* http://www.rospa.com/roadsafety/conferences/congress2007/info/elizabeth_towner.pdf (last accessed 21.11.2007)

Turner, K., Hill, M., Stafford, A., and Walker, M. (2006) 'How children from disadvantaged areas keep safe' *Health Education* **106**(6) 450-464

Vernick, J.S., Li,G., Ogaitis,, S. MacKenzie, E.J. Baker, S.P. and Gielen, A.C. (1999) 'Effects of high schools driver education on motor vehicle crashes, violations and licensure' *American Journal of Preventive Medicine* **16**(1 Suppl.) 40-46

Vinson, J.A. (2002) Children with asthma: initial development of the Child Resilience Model. *Paediatric Nursing* **28,**149-158

Warwick, I., Blenkinsop, S., Aggleton, P., Eggers, M., Chase, E., Schagen, I., Schagen, S., Zuurmond, M. and Scott, E. (2004) 'Evaluation of the impact of the National Healthy School Standard' London: Institute of Education http://www.nfer.ac.uk/research-areas/pims-data/summaries/hsi-evaluation-of-the-impact-of-the-national-healthy-school-standard.cfm (last accessed 21.11.2007)

Wells, J., Barlow, J., and Stewart-Brown, S. (2003) 'A systematic review of universal approaches to mental health promotion in schools' *Health Education* **103**(4) 197-220

Werle, G.D. (2006) 'Taking steps to promote safer schools' *Journal of School Health'* **76**(4) 156-157

West, P. (2006) 'School effects research provide new and stronger evidence in support off the health promoting school idea' *Health Education* **106**(6) 421-424

Wetton N.M. and McWhirter J.M. (1998) 'Image based research and curriculum development in health education' in: *Image based research - a source book for qualitative researchers* Ed: Prosser, J. Falmer Press

Whitebread, D. and Neilson, K. (1999) 'Learning to cross the road: cognition in action *The Psychologist* **12**(8) 403-405

Wight, D, (1999) 'Limits to empowerment based sex education' *Health Education* November 1999 233-343

WHO (1986) *The Ottawa Charter for Health Promotion*
http://www.who.int/healthpromotion/conferences/previous/ottawa/en/

Wurtele, S.K., Gillespie, E.I., Currier, L.L. and Franklin, C.F. (1992a) 'A comparison of teachers vs. parents as instructors of a personals safety program for pre-schoolers' *Child Abuse and Neglect* **16**(1) 127-137

Wurtele, S.K., Kast, L.C. and Melzer, A.M. (1992b) 'Sexual abuse prevention education for young children: a comparison of teachers and parents as instructors' *Child Abuse and Neglect* **16**(6) 865-876

Wurtele, S.K. and Owens, J.S. (1997) 'Teaching personal safety skills to young children: An investigation of age and gender across five studies' *Child Abuse and Neglect* **21**(8) 805-814

Wurtele, S.K., Kast, L.C., Miller-Perrin, C.L. and Kondrick, P.A. (1989) 'Comparison of programs for teaching personal safety skills to preschoolers' *Journal of Consulting and Clinical Psychology* **57**(4) 505-511