Key principles of effective prevention education

Education is a crucial element of broader efforts to prevent negative outcomes, and school-based programmes therefore provide an important context in which to deliver universal preventative interventions. There is a wealth of evidence to show that classroom-based prevention education, when taught in line with best practice, can have a significant impact across a range of risk behaviours.

Reviews of prevention programmes show that they have been associated with positive outcomes in relation to alcohol, tobacco and cannabis consumption (Foxcroft, 2011), as well as healthy eating, exercise, and taking safety precautions like wearing a cycle helmet (Langford et al., 2014). Studies also show improvements in mental health and social skills, and reductions in antisocial behaviour (Sklad et al., 2012). Sex and relationships education programmes have been shown to reduce risky behaviours and negative outcomes (such as unplanned pregnancies) and to increase the chances of going on to have healthier relationships (Kirby and Laris, 2009; UNESCO, 2009; NICE, 2010; NATSAL, 2012).

There is further evidence demonstrating the link between social and emotional education programmes and academic attainment (Sklad et al., 2012; Durlak et al., 2011), showing that this learning improves academic performance. Efforts to build resilience have also been shown to have a positive impact both on risk-taking behaviours and on academic attainment (Public Health England, 2014). More generally, associations between mental wellbeing and good academic performance (Gutman and Vorhaus, 2012) suggest that programmes which have positive outcomes for pupils' wellbeing could also indirectly affect their academic attainment.

The effectiveness of prevention education programmes are, inevitably, affected by the quality of implementation (for example, see Durlak and DuPre, 2008). Evidence suggests that the quality of provision is variable at present. In English schools, PSHE education is the most common mode of delivery for education around key areas including substance misuse, online safety, sexual health, healthy relationships, mental health and emotional wellbeing. However, Ofsted's most recent review of provision noted that it was 'not yet good enough' in schools, pointing to a lack of confidence among teachers, who are often not trained in the subject (Ofsted, 2013).

At present, opportunities for teachers to develop expertise in prevention education are limited. Reviews of initial teacher education (ITE) providers show that coverage of different topics is variable – while child protection and emotional health are covered consistently, sex and relationships and substance misuse are often not covered. As a whole, the range of topics related to health and wellbeing can form less than 5% of overall teacher training (Shepherd et al., 2013), and later opportunities to specialise in prevention education can be prohibitively expensive: following withdrawal of government funding for the PSHE CPD Programme, the number of teachers training in the subject has fallen by 90% (Scott, 2015).

Unless good practice is followed, a significant proportion of the prevention education currently delivered in English schools may have little or no impact. It is also possible that, in some sensitive areas such as teaching on mental health and wellbeing, poor practice may lead to negative effects.[1]

While the lack of access to training for teachers in effective prevention education continues, the development and dissemination of effective practice, based on up-to-date research, is crucial to raising standards of prevention education across the country. These principles can both raise the quality of teaching in individual schools, and additionally inform the development of curricula, resources and training programmes. This report aims to outline recent research into the determinants of effective practice across a range of prevention education programmes.

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[1] See O'Dea and Abraham (2000)(in relation to eating disorders, Faggiano (2008) on drug use and DiCenso et al. (2002) in relation to unprotected sex.

Evidence review

This report summarises research into effective pedagogical principles in the field of school-based preventative education (across a range of behaviours including drug and alcohol use, healthy eating, physical activity and sexual activity) as well as school-based programmes to build skills and attributes associated with reduced risk-taking behaviour (including social and emotional skills, and resilience).

We searched academic journals and documents produced by Government and educational organisations to identify evidence around best practice in preventative education. We focused on research which identified effective characteristics, based on evaluations of universal school-based prevention education programmes. To meet the requisite criteria, research needed to review a number of studies, and, based on this, identify characteristics common to effective or to ineffective programmes.

Programmes with a range of objectives were included, such as on drug and alcohol education, safety education, and sex and relationships education. No research on online safety was found which met the criteria. In addition, principles around health promotion (while not strictly prevention) were also included.

Limitations

There is a lack of evidence around effective practice in online safety education specifically, although authors note that the same principles are often transferrable across different health and risk behaviours. Jones et al. (2014a) argue that 'evaluation has not been a priority' in the field of internet safety education, but that programmes can learn from effective practice identified in other prevention research. Similarly, Hinduja and Patchin (2009) note that popular approaches to online safety education and efforts to prevent cyberbullying are yet to receive 'solid empirical support'.

However, authors note that these principles are often transferrable across different health and risk behaviours (Jones et al., 2014a), and that there is now a sufficient evidence base in prevention education to develop 'principles that transcend the individual programmes or areas' (Nation et al., 2003). As this report shows, there is considerable consensus on the principles of effective practice across a range of prevention education areas, which can inform online safety education despite the lack of evidence on prevention education focused on online safety specifically.

While numerous studies have been conducted into the effectiveness of various preventative education programmes, it is difficult to identify the 'active ingredients' – the elements of the programme that are responsible for its effectiveness. Research has therefore sought to identify programme elements which are common across effective programmes and/or absent from ineffective ones – this is the approach employed in this report. Yet this approach has its limitations. Identifying programme elements that are associated with effectiveness does not mean that these elements actually *cause* effectiveness. However, as Ttofi and Farrington note, 'this is the best evidence we have at present' (Ttofi and Farrington, 2011, p. 44).

Studies identified

Fifteen studies were identified which met the criteria set out above. All of the studies reviewed and synthesised evidence on effective practice into a set of principles for PSHE education. There is some overlap in the studies considered by these reviews.

The first five studies listed draw out broad principles based on a review of a range of prevention areas, and the remaining ten focus on specific areas, such as drug and alcohol education or sex and relationships education.

1   'The theory and practice of PSHE education' (McWhirter, 2009), on which the PSHE Association's 'Ten principles of effective practice in PSHE education' are based, distils theories of teaching and learning into a set of ten principles of effective practice.

2   The Department for Education review of the evidence on impact and effective practice in PSHE education outlines a set of common effective practices identified in successful programmes (Department for Education, 2015).

3   A review by Nation et al. (2003), 'What works in prevention: Principles of effective prevention programmes', identifies nine principles of effective preventative education programmes. Effective preventative education is comprehensive, incorporates varied teaching methods, provides sufficient dosage, is based in theory, promotes strong relationships, is appropriately timed in terms of pupils' development, is socioculturally relevant, includes evaluation of outcomes, and is implemented by well-trained staff.

4   Jones et al. (2014a) reviewed 31 meta-analyses of youth prevention education programmes including programmes on substance abuse, risky sexual behaviour and delinquency, and coded them to identify prevention programme characteristics shown by research to be effective. The study aimed to use these to inform internet safety education, and identified that active, skills-based lessons, focused on research-based causal and risk factors, and provided with 'adequate dosage' were key.

5   Herbert and Lohrmann (2011) conducted a content analysis investigating instructional strategies used in ten health education curricula which were research-based and proven via empirical testing to positively influence any of six health risk behaviours. They identified three active learning strategies which were evidenced in all ten curricula: role play, group cooperation and small group discussion. Interactive technology and team games were also used in some curricula. They concluded that active learning strategies are key to effective health education, as they allow students to apply knowledge through practice. They argue that substantial instructional time needs to be devoted to involving students in skills practice.

6   'A review of safety education: Principles for effective practice' (McWhirter, 2008) outlines a set of principles for effective education interventions aimed at preventing accidents and injuries, personal safety, and prevention of bullying, physical aggression and child abuse. These principles are based on a review of British and international evidence published in the previous five years on effective school-based safety and risk education programmes. Mulvaney et al. (2011) subsequently updated this review, by examining more recent evidence. They concluded that the ten principles devised by McWhirter were relevant to more recent papers and continue to be of value.

7   Public Health England (2014) guidance on 'Building children and young people's resilience in schools' includes evidence-based principles for building resilience. As the guidance notes, higher levels of resilience are associated with lower risk-taking behaviour and greater emotional wellbeing. The guidance outlines a number of ways of building children and young people's resilience in schools, including curriculum-based interventions as part of a whole-school approach.

8   Mentor ADEPIS' best practice principles (Mentor ADEPIS, 2014) are based on a review of effective drug and alcohol education, drawing on sources including PSHE Association and Ofsted guidance as well as international research.

9   The United Nations Office on Drugs and Crime (UNODC) report (2004) that guiding principles in drug abuse education have been developed 'in consultation with a group of practitioners, including youth, experts, policy makers and researchers from a number of countries, who made professional judgements after consideration of the available research and current practice in school based drug education'.

10 Berkowitz and Bier (2005) conducted a review of 'What works in character education', identifying common pedagogical elements of 33 character education programmes which had been shown to be effective by academically rigorous studies. Based on this, they identified a number of effective strategies including professional development, peer interaction, direct teaching, skill training, having an explicit agenda and family/community involvement. Effective programmes also often provided models and mentors, integrated character education into the academic curriculum, and used a multi-strategy approach.

11 Kirby and Laris (2009) conducted a review of 55 studies of curriculum-based sex education programmes, including both abstinence and comprehensive programmes. About two-thirds of the studies were found to have a significant positive impact on one or more relevant sexual behaviours or outcomes, with 4% having a negative impact. Coding conducted on both effective and ineffective curricula identified 17 common characteristics of effective programmes in the areas of: the process of developing the curriculum; the contents of the curriculum (including activities and teaching methodologies); and the process of implementing the curriculum. Kirby et al. (2007) further developed these 17 characteristics into a comprehensive assessment tool for curriculum developers.

12 Thomas et al. (2015) conducted a review of 50 randomised controlled trials into school-based programmes for preventing smoking. They concluded that, overall, programmes which included social competence curricula, or combined a social competence curriculum with a social influence curriculum were more effective than other programmes. Social competence curricula aim to improve personal and social skills, such as problem-solving and decision-making, cognitive skills for resisting interpersonal or media influences, increased self-control and self-esteem, coping strategies for stress, and general social and assertiveness skills. Social influence curricula develop skills to increase pupils' awareness of social influences that support behaviours like substance use. They teach pupils how to deal with peer pressure, high-risk situations and refusal of attempts to persuade.

13 Durlak et al. (2011) identified a set of 'SAFE' practices, based on a number of previous studies, for effective social and emotional learning (SEL). Researchers later found in a meta-analysis of 213 school-based SEL programmes that those combining all four of these recommended practices were more effective than those which included only some or none (Durlak et al., 2011). Effective programmes emphasise the need for explicit learning goals and a sequenced approach which

breaks down skills into smaller steps which are mastered sequentially. SAFE practices also involve offering active learning, which allows pupils to 'act on the material' and practice skills, and also allow sufficient time for pupils to gain the skills.

14 Ttofi and Farrington (2011) conducted a systematic review and meta-analysis of anti-bullying programmes incorporating 89 reports into 53 programme evaluations. They identified programme elements associated with a decrease in bullying and victimisation, including parent meetings, firm disciplinary methods and improved playground supervision. However, peer engagement such as peer mediation, peer mentoring and encouraging bystander intervention was significantly associated with an *increase* in victimisation.

15 O'Dea (2005) conducted a review of school-based prevention programmes which aimed to improve body image and prevent eating problems. She reviewed research from the past 50 years, identifying 21 programmes which had shown at least one improvement in knowledge, beliefs, attitudes or behaviours. The most effective programmes were interactive, involved parents, built self-esteem and provided media literacy.

From these reports, we established the principles of effective preventative education identified in each report, and then mapped out the similarities and differences between them. Where possible, links are made between the general principles derived from this literature and recommendations developed on online safety specifically.

Key elements of effective practice

This section discusses some of the principles of effective preventative education identified in the research outlined above.

1   A whole-school approach including multicomponent interventions

A whole-school approach to preventative education ensures that the curriculum, school policies, pastoral support and the school ethos complement each other to create an environment that helps to prevent negative behaviours.

Most of the reviews (McWhirter, 2008, 2009; Nation et al., 2003; Public Health England, 2014) recommend the use of a whole-school approach, suggesting linking preventative education to whole-school policies and to pastoral support (Mentor ADEPIS, 2014), as well as integrating preventative education within the broader curriculum (Berkowitz and Bier, 2005; Department for Education, 2015) as well as within a discrete subject. There is also strong consensus on the importance of creating a safe and secure learning environment and a school ethos which promotes positive relationships between peers, and between pupils and staff (McWhirter, 2009; Department for Education, 2015).

This is also related to recommendations to provide 'an array of interventions' from skill development to awareness raising, to service provision conducted in 'multiple settings' involving parents, peers and schools.

A whole-school approach is backed by broader evidence including the Cochrane Review of Health Promoting Schools: that is, schools which combine a curriculum with wider parental engagement and a positive school environment (Langford et al., 2014). However, one study into smoking prevention programmes (Thomas et al., 2015) found a lack of evidence for the effectiveness of 'multimodal' programmes which include a range of interventions including 'tobacco prevention interventions in schools, the community, and with parents and community members, and school or state policies to change tobacco sales, increase taxes and prevent sales to minors'.

2   Varied teaching styles addressing a range of factors

Reviews recommend the use of comprehensive and diverse intervention strategies as well as varied teaching styles. Researchers (Nation et al., 2003; Kirby et al., 2007) identify the need to use an 'array of interventions', 'multiple activities' and 'varied teaching methods' to address the full range of risk and protective factors. Some researchers note the importance of using a variety of teaching methods (McWhirter, 2009; Nation et al., 2003; Herbert and Lohrmann, 2011; Berkowitz and Bier, 2005), ranging from direct instruction to interactive and participative learning, and focusing on acquiring skills and developing awareness. However, there is particular emphasis across the literature on an active, skills-based approach, albeit one which incorporates a mix of strategies as part of this approach.

While Ttofi and Farrington (2011) found positive effects of cooperative group work, they also found that anti-bullying programmes increased victimisation and bullying where they involved working with

peers – including peer mediation, peer mentoring and encouraging bystander intervention. They attribute this to the detrimental effects of focusing on 'delinquent' pupils.

2.1 Active skills-based learning

Researchers highlight the importance of active skills-based learning – defined as 'anything that involves students in doing things and thinking about what they are doing' (Herbert and Lohrmann, 2011). A range of research agrees that primarily non-interactive strategies, or those based on knowledge alone are not effective (UNODC, 2004; Jones et al., 2014b; Thomas et al., 2015). Opportunities to practise skills are identified as important by a number of reports (UNODC, 2004; Jones, 2010; Thomas et al., 2015). Active learning strategies allow pupils to engage in skills practice. Providing pupils with opportunities to make real decisions about their lives, including in school, offers an opportunity for this kind of skills practice.

Herbert and Lohrmann (2011) looked more closely at the types of learning strategies which are found to be effective, identifying a set of five strategies (all forms of active skills-based learning) which were found in effective health education curricula. They found that role play, group cooperation and small group discussions were found in all of the ten curricula, and interactive technology and team games found in most. They explain:

> General characteristics of active learning include involving students in more than just listening, less emphasis on facts, more emphasis on developing skills, engaging students in activities and focusing their values and attitudes.

The authors argue that fact-based curricula, compared with skills-based curricula, fail to incorporate active learning, and are less effective. Thomas et al. (2015) also found that curricula were effective only where they included teaching social competence skills, whereas those focusing on knowledge alone were ineffective.

Nation et al. (2003) recommended that skills differ based on the aims of the programme, and Jones et al. (2014a) echo this concern, arguing that switching to a more 'action-oriented' online safety education requires 'a better specification of the skills youth need to avoid the kinds of problems that stakeholders are worried about'.

Durlak et al.'s (2011) research on effective social and emotional learning (SEL) programmes digs deeper into how skills can be built. SEL programmes aim to develop the skills, attributes and knowledge to make responsible decisions, achieve positive goals and maintain positive relationships. The authors identify a set of so-called 'SAFE' principles of effective social and emotional learning, which outline how these skills can be developed. Effective programmes emphasise the need for explicit learning goals and a sequenced approach which breaks down skills into smaller steps which are sequentially mastered. SAFE practices also involve offering active learning, which allows pupils to 'act on the material' and practise skills, and also allow sufficient time for pupils to gain the skills. A 2015 review of SEL programmes used in the UK (Clarke et al., 2015) similarly argued that successful interventions used 'competence enhancement strategies and empowering approaches' which included interactive teaching methods and teach social and emotional skills, such as classroom interaction, games, role play and group work.

As one might expect, given the emphasis on developing preventative education programmes which build personal skills alongside knowledge, there are considerable similarities between the principles identified for successful skill-building SEL programmes and the broader principles of effective preventative education identified in this report.

2.2 Psychosocial aspects and normative education

In a related vein, researchers regard a focus on psychosocial aspects of safety as important – which includes developing confidence, resilience, self-esteem and self-efficacy – as well as perceived risks, attitudes, values and perceived norms (McWhirter, 2008, 2009; Kirby et al., 2007; Thomas et al., 2015; O'Dea, 2005). McWhirter (2009) also recommends the use of normative education, actively promoting positive social norms.

Yet the UNODC International Standards for Drug Prevention guidelines offer a caveat in the case of drug education, stating that preventive education which focuses only on knowledge acquisition, only on building self-esteem and emotional education, or which only addresses ethical/moral decision-making has been shown to be ineffective or to have adverse effects. This reinforces the need to balance a range of strategies (Nation et al., 2003). Thomas et al. (2015) found that curricula which focused on knowledge alone, or on tackling social influence alone were ineffective; the latter was only effective when combined with social competence learning.

3 A developmental programme which is appropriate to pupils' age and maturity

Researchers identify the need for prevention education programmes to be developmental (McWhirter, 2009; Department for Education, 2015), taking into consideration the changing needs of pupils as they grow. In addition, programmes should start early enough to have an impact (Department for Education, 2015; Nation et al., 2003), and be appropriately timed to the age, maturity, needs and assets of pupils. To do this, educators must conduct an assessment of the needs of pupils to understand their current understanding, culture and experiences (McWhirter, 2008, 2009; Kirby and Laris, 2009).

Public Health England guidance (Public Health England, 2014) on building resilience also identifies transitional periods – moves from home to school, between schools, or from school into further education – as key moments of opportunity and vulnerability, and so as ideal points at which to target interventions.[2]

In addition, programmes should be designed to provide progressive, step-by-step learning, with topics covered in a logical order (Kirby et al., 2007), and a planned, sequenced approach to activities (Durlak et al., 2011).

3.1 Pupils with learning disabilities

Pupils with learning disabilities are often more vulnerable to both online and offline abuse, and so programmes should be tailored to their particular development. Gougeon (2009) notes the additional challenges that pupils with disabilities face in building skills due to their more limited access to the 'hidden curriculum': that is 'the curriculum learned incidentally outside the classroom through peer interactions – interactions from which students with intellectual disabilities are often precluded'.

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[2] The guidance includes a case study of resilience-building transition programmes implemented in schools in Scotland. These programmes take a whole-school approach, aiming to develop a school environment which promotes resilience and to train both teachers and headteachers in resilience and wellbeing. Findings show that the project was effective in achieving its aims, and the discussion raises interesting issues about successful implementation (Scottish Development Centre for Mental Health YM, 2009).

There are some reviews into the factors that affect the effectiveness of sex and relationships education interventions for young people with learning disabilities. Overall, research in this area further reinforces the broader principles identified in this report, noting a particular need to focus on skill-building for pupils with disabilities, and on guiding pupils to apply those skills in real-life contexts.

A study by Bruder and Kroese (2005) into clinical interventions aimed at people with learning disabilities suggested that knowledge alone does not change behaviour, and it is also necessary to teach skills through role play and rehearsal – echoing the findings of broader prevention education research. They further draw the distinction between teaching pupils skills, and teaching how to generalise these skills to real-life settings, both of which must be taught.

Schaafsma et al. (2015) conducted a review of sex education programmes for special educational needs and disability (SEND) pupils, with the aim of identifying effective teaching methods. The authors identify a lack of evidence and theoretical basis for the teaching of sex education, with many papers lacking adequate detail on what was taught and how. Despite these concerns, the authors identify active learning methods, including modelling, role play, rehearsal and practice skills, as useful for improving skills.

4 Learning which is inclusive of difference and socioculturally relevant

Researchers note the importance of ensuring that prevention education programmes are relevant to the communities in which they are delivered (Department for Education, 2015; Nation et al., 2003; Kirby et al., 2007) as well as to diversity in relation to culture, ethnicity, faith, disability, sexuality and gender identity. Kirby et al. (2007) note the importance of developing programmes which are relevant to youth culture as well.

5 Well-trained teachers

A number of researchers note that programmes are more effective when delivered by teachers who have access to ongoing high-quality training and support, and are confident in their role (Nation et al., 2003; Department for Education, 2015; Mentor ADEPIS, 2014; Kirby et al., 2007; Berkowitz and Bier, 2005). In addition, teacher training bears upon the need to implement the programme with fidelity (Kirby et al., 2007; Mentor ADEPIS, 2014). Programmes which are implemented as intended are more likely to be successful, and providing training and support to those responsible for programme delivery increases the chances that this will be the case.

UNODC guidance (2004) also notes the importance of developing programme tools which enhance and support the teacher's existing role, noting that teachers' credibility may be damaged where programmes are seen to be externally imposed.

6 Theory/research-based and factual

Studies suggest that it is important to design prevention education programmes which are based on theory (that is, programmes are designed based on relevant theories, for example on child development); based on empirical evidence; and subject to ongoing evaluation (Jones, 2010). Kirby et al. (2007) note the importance of expertise in the curriculum development process as well as in curriculum delivery, recommending involving people with diverse areas of expertise at the development stage.

Theory-based preventative education is identified as important by many researchers (Finkelhor et al., 2010; Jones, 2010; Nation et al., 2003; McWhirter, 2008; Schaafsma et al., 2015). Researchers also recommend that educators use a full range of strategies which have been shown to be effective (Jones, 2014b), take a theory-based approach which accurately identifies risk and protective factors, and pilot, monitor and evaluate the success of individual programmes.

Jones (2010) has raised concerns about the lack of high-quality evaluation of online safety programmes, warning that "prevention and education response to internet safety has so far followed a pattern reminiscent of problematic responses to earlier youth safety crises', including drug education programmes in the 1970s which were later found to be largely ineffective (Jones et al., 2014b) b. The authors argue that internet safety interventions should be designed around identified causal and risk factors – something that has not consistently been the case. Researchers also note the importance of offering factually correct and realistic information (McWhirter, 2009).

Principles of prevention education also incorporate the need for evaluation, both at school and programme/curriculum levels. The Mentor ADEPIS standards (2014) require that approaches are evaluated for effectiveness and Kirby et al. (2007) recommend the piloting of curricula as well as evaluation.

A lack of high-quality empirical research in the area of online safety therefore presents challenges to understanding the 'dynamics and scope' of online risk, as well as to ensuring that programmes are and continue to be effective, particularly given a context of ongoing technological change (Jones, 2010; Finkelhor et al., 2010).

7 A positive approach, avoiding 'scare tactics' or confrontational strategies

Researchers note the importance of avoiding attempts to induce fear, shock or guilt (Jones et al., 2014b; McWhirter, 2009, 2008). Studies into the effectiveness of drug and alcohol programmes have shown that attempts to scare pupils are found to be ineffective or even to increase the likelihood of substance use (UNODC, 2004). Similarly, studies into targeted programmes to prevent youth offending have found that a focus on negative consequences and 'harsh realities' or on boot-camp-style discipline is ineffective or can increase the likelihood of offending (Lipsey, 2009). Ttofi and Farrington's (2011) finding that strong disciplinary methods are effective may be seen as contradictory to the studies cited above, although they note that these findings could be due to the influence of one highly successful study which used these methods.

8 Clear goals and outcomes, and effective monitoring and evaluation

There is a broad consensus on the need for preventative education programmes to have clear overall goals, and for lessons to have clear objectives (Berkowitz and Bier, 2005; Department for Education, 2015; Mentor ADEPIS, 2014; Kirby et al., 2007; Durlak et al., 2011; UNODC, 2004). Kirby et al. (2007) outline the implications of such an approach, recommending clearly mapping out health goals and specific behaviours being targeted, as well as identifying the protective and risk factors associated with the targeted behaviours, and how interventions are expected to impact on those factors. Berkowitz and Bier (2005) argue that these clear objectives should also be communicated to stakeholders, including pupils themselves.

As noted previously, a clear link between interventions and targeted behaviours can only be achieved through a theory- and research-based approach which identifies the reasons why elements of a programme are effective, and accurately identifies causal and risk factors leading to unsafe online behaviour, noting that these will differ based on the desired intervention outcomes.

There is also a link between the need for clear objectives, and effective evaluation and assessment to ensure that programmes continue to achieve these objectives. Authors note the importance of evaluating approaches for effectiveness, piloting programmes, and ongoing assessment, monitoring and evaluation including collecting data on pupils' and teachers' views of the programme.

9 Support from school leadership teams and other authorities

The Department for Education (2015) and Mentor ADEPIS standards (2014) both note the importance of gaining support from the headteacher and the senior management team. Kirby et al. (2007) recommend securing 'at least minimal support' from appropriate authorities, which can include regional authorities and community groups.

10 Community, parent and pupil engagement

Researchers recommend the engagement of pupils, especially older pupils, in the design and development of the programme, noting that this is a characteristic of successful interventions (McWhirter, 2008; Kirby et al., 2007; Department for Education, 2015). Nation et al. (2003) note that effective programmes attempt to include the target group in programme planning and implementation, while UNODC (2004) note the importance of collaboratively developed and transparent policies and procedures around drug prevention.

Researchers also argue that programmes are more effective where they encourage the involvement of parents, guardians and the wider community (Mentor ADEPIS, 2014; McWhirter, 2009; Department for Education, 2015; Public Health England, 2014) as well as partnership working with other agencies where appropriate (McWhirter, 2008; Department for Education, 2015). Public Health England guidance (2014) recommends building links between home and school and supporting

positive parenting practices – prevention education which operates across multiple settings, beyond school, ensuring that the intervention takes place in multiple areas of a child's life (Nation et al., 2003).

In contrast, Jones et al.'s (2014b) review of prevention education programmes suggests more mixed findings around parent engagement, with some studies suggesting that it had no impact on effectiveness. They identified problems related to the high level of commitment demanded of parents by some programmes. Some forms of pupil engagement are also shown to have negative effects, with evidence showing that peer mediation, peer mentoring and encouraging bystander intervention are not effective at tackling bullying and improving behaviours (Ttofi and Farrington, 2011).

Thomas et al. (2015) also found that 'multimodal' interventions, which included engagement with the community among a range of other strategies to be ineffective.

11 Intervention must be of adequate length or intensity

Research suggests that it is important for an intervention to have sufficient 'dosage' to achieve the desired effects (Nation et al., 2003; Jones et al., 2014b; UNODC, 2004; Ttofi and Farrington, 2011). This can be measured both in terms of the quantity and quality of sessions, and is likely to vary across programmes. For example, Mason (2008) suggests that online safety education must mirror the 24/7 nature of digital communication.

This consideration must be balanced with the need to ensure that the resources required for the successful implementation of an intervention are consistent with the resources available, including staff time (Kirby et al., 2007). This must be considered when selecting 'effective' programmes, since poorly resourced interventions are less likely to be implemented appropriately.

Conclusions

While the lack of research evaluating the effectiveness of online safety programmes remains of concern, programme developers can draw on existing research in other areas of prevention education, given the apparent generalisability of their findings.

There is considerable consensus on the hallmarks of effective programmes, including a focus on a developmental approach, skill-building and active learning; engagement of stakeholders including pupils, parents, teachers and the broader community; and clarity on intended outcomes and ongoing evaluation of these.

In addition, programmes can heed calls to ensure that education is factual, both in terms of the information imparted to pupils and in terms of knowledge of the behaviours, skills and attributes associated with risky versus safe behaviour online. Research into how children and young people use the internet, such as that assembled by the UK Safer Internet Centre (2015), can support this work but the findings do suggest thorough consideration is needed of the risk factors related to online safety and the specific skills needed to stay safe online before programmes are developed.

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