

The Citizenship Safety Project: a pilot study

K. Frederick^{1,3} and J. Barlow²

Abstract

The Government White Paper *Saving Lives: Our Healthier Nation* (1999) provides a clear indication that accidents are a serious public health problem and have been targeted by the Department of Health as a key area for prevention over the next 10 years. School-based injury prevention programmes have been identified as one of the key settings for the implementation of the White Paper's health promotion strategies. The Citizen Safety Project (CSP) is a peer-delivered injury prevention programme for Year 10 students (14–15 years) and Year 2 pupils (6–7 years). This paper summarizes the findings of a pilot study that assessed the feasibility of implementing the CSP in schools and of conducting a larger study. Working as part of their Personal Social Health Education lessons, 11 pairs ($n = 22$) of Year 10 students developed a project to take one accident prevention theme of their choice into a primary school to teach small groups of five or six Year 2 pupils ($n = 55$). A formative evaluation was conducted, based on interviews with Year 2 and Year 10 teachers ($n = 2$), and the diaries of Year 10 students. Knowledge of accident prevention and risk awareness was measured in Year 2 pupils using the Draw and Write

technique, and impact on Year 10 students was measured using self-esteem and locus of control inventories. Using both statistical and thematic analysis the study concludes that the CSP is well accepted, improves knowledge in Year 2 pupils and boosts confidence in Year 10 students, while concurrently achieving key stage attainment targets. Implications of the study are discussed in terms of future research, as are recommendations with regard to modifications to the project.

Introduction

Accidents are a major cause of injury and death in children aged 1–14 years, accounting for almost 40% of childhood deaths in developed nations (UNICEF, 2001). The high mortality and morbidity, the high personal costs, and the high financial costs to the nation in terms of treatment and rehabilitation have ensured that this is one of the four key areas of public health that the UK Government plans to tackle over the next 10 years (Department of Health, 1999).

A recent systematic review of evaluations of school health promotion programmes concluded that the classroom components of current school-based injury prevention programmes are relatively unsophisticated compared to those developed for sex education and substance misuse prevention (Lister-Sharpe *et al.*, 1999).

The Government White Paper on public health, *Saving Lives: Our Healthier Nation* (Department of Health, 1999), has, however, identified schools as one of the key settings for the implementation of

¹Clinical Trial Service Unit, University of Oxford OX3 7LF, UK and ²University of Warwick, Coventry CV4 7AL, UK
³Correspondence to: K. Frederick;
E-mail: kate.frederick@ctsu.ox.ac.uk

health promotion strategies. One of the aims of the Government's plan for education is to give pupils the knowledge, skills and understanding to become informed, responsible citizens (Qualifications and Curriculum Authority, 2000). Citizenship, which was introduced as a new foundation subject in the National Curriculum for Key Stage 3 and 4 in August 2002, aims to develop the skills of enquiry and communication to enable pupils to participate responsibly in the social arena, both in the school and the wider community. There are strong links between citizenship education, and Personal, Social and Health Education (PSHE), which aims to promote pupils' personal and social development, health and wellbeing.

This paper focuses on the delivery of the Citizenship Safety Project (CSP), a peer-delivered accident prevention programme. The project uses cross-age tutoring as opposed to peer tutoring. Although these terms are somewhat ambiguous and often used interchangeably, the fundamental difference is that cross-age tutoring uses higher year students to teach lower year students, whereas in peer tutoring the tutor and tutee are approximately the same age. When describing the CSP, this paper will use the term 'cross-age tutoring'.

Peer tutoring is one of the main approaches being used to deliver health promotion in schools in key areas such as substance misuse, HIV and AIDS education, smoking cessation, and sex education (Prince, 1995; White and Pitts, 1997; Svenson, 1998). It draws on a number of theories including Social Learning Theory, Diffusion of Innovation and Social Inoculation Theory (McGuire, 1969; Bandura, 1977; Rogers, 1983), and is based on the assumption that establishing peer educators in defined populations will result in behaviour change in peers. Social influence is thought to be a key predictor of change. One of the advantages of using 'children' as tutors is that they are cognitively closer to their tutees and in many instances considered a more credible source of information than an adult. Furthermore, there is reciprocity of benefits: the tutee gains an understanding of the topic being delivered, while the tutor's knowledge is reinforced (Cohen *et al.*, 2000).

While a literature search revealed a plethora of evidence on the effectiveness of peer tutoring in the fields of mathematics and reading (Topping and Ehly, 1998; Topping *et al.*, 2003), the evidence base for using this form of teaching in health promotion appears to be limited (Harden *et al.*, 1999). In addition, only one study aimed at injury prevention was found (Tenn and Dewis, 1996).

This paper summarizes the findings of a pilot study that was conducted to assess the feasibility of implementing a peer-delivered injury prevention programme in primary and secondary schools. This is one of the first UK-based studies to examine the benefits of a project that teaches accident prevention and risk awareness using cross-age tutoring. It is timely because of its contribution to the fulfilment of Government targets for both education and health.

The intervention

The intervention has grown out of the Injury Minimization Programme for Schools (IMPS), a UK-based accident prevention programme. IMPS was developed in the early 1990s, and comprises classroom teaching and development of first-aid and basic life-support skills for Year 6 (10–11 years) children. It has been shown in a controlled study to improve knowledge and skills relevant to injury prevention (Frederick *et al.*, 2000).

In response to concerns to widen the age range covered by injury prevention education in schools, the IMPS team developed the CSP. This innovative project supports citizenship education and can be integrated into the National Curriculum in PSHE lessons, meeting requirements of Key Stage 4 attainment targets in citizenship.

The CSP is a cross-age tutoring intervention in which Year 10 (14–15 years) students teach Year 2 pupils (6–7 years) aspects of accident prevention and risk awareness. This initiative reinforces what students learnt in the IMPS programme in Year 6 with an additional intervention at Year 10. It also initiates a new generation of Year 2 pupils into the basics of injury prevention. In addition, those

Year 10 students who may not have experienced IMPS in Year 6 will gain valuable information through the researching of topics in the field of accident prevention.

Methods

The CSP is still in the development stage. A formative pilot evaluation was therefore conducted comprising both the collection of process and outcome data, using questionnaires, diaries and interviews. A pre- and post-test design was used for the purpose of evaluating the impact of the intervention. The aim of the pilot study was to assess the following:

- Feasibility of implementing the CSP in schools, i.e. organizational issues and resources.
- Acquired knowledge of accident prevention in Year 2 pupils.
- Changes in self-esteem and locus of control in Year 10 students that can be reliably attributable to taking part in the CSP (Topping *et al.*, 2003).
- Perceptions about the project and satisfaction with the project in both Year 10 and Year 2 teachers.
- Year 10 and Year 2 pupils' perceptions about the project.

Sampling

Sampling for the study was opportunistic. Twenty-seven secondary schools in the area were invited to take part in the pilot study. Only one rural secondary school responded positively, and was then matched with a feeder primary school that agreed to take part in the study and that was within walking distance of the secondary school.

Study subjects

Volunteers were requested from the 150 Year 10 students (14–15 years) in the secondary school; 22 agreed to take part in the study. All 55 Year 2 pupils (6–7 years) in the primary school volunteered to take part in the study. One Year 10 teacher and one Year 2 class teacher also took part. Table I indicates

the demographic composition of schools. Table II shows the gender mix of the participating students/pupils. The authors are aware that accidental injury in children has a marked gender bias; however, it was not possible in this instance to include more male tutors in the study ($n = 4$). There were no students/pupils from minority ethnic groups.

Ethical considerations

The Oxford Applied and Qualitative Research Ethics Committee ruled that as the study was educational, with no direct or indirect clinical impact on children, and that the study was being conducted outside the NHS, ethics permission was not required. However permission to conduct the research was sought from, and granted by, head teachers, and the Year 2 and Year 10 teachers of participating schools.

Implementation of the intervention

The CSP was delivered over one academic term as part of the PSHE lessons, to the Year 10 students

Table I. Demographic composition of schools

	Secondary school	Primary school
School size	880	401
Ethnic minorities (%)	1.25 (EFL)	1.7
Special educational needs (%)	12.4	16.5
Free school meals (%)	6.6	8.5
Statemented (%)	2	0
Attainment on entry	above average	above average

Table II. Gender of participating students

	<i>N</i>	%
Demographic mix of Year 10 students		
female	18	82
male	4	18
total	22	100
Demographic mix of Year 2 pupils		
female	32	59
male	22	41
total	54	100

taking part in the project. Year 10 students have on average 1 hour allocated to PSHE a week and the CSP used 45 min of this time per week for a period of 10 weeks. A teacher was employed by the CSP as part of the study to deliver the project to Year 10 students. Working with this teacher in a classroom for 7–8 weeks, Year 10 students discussed, and acquired through practice, an understanding of the appropriate teaching skills for working with Year 2 pupils. The students worked in pairs, the pairs having been matched by the students' personal choice. If any pairs were dysfunctional, however, adaptations were made. These pairs each developed a lesson on one accident prevention theme of their choice. There were five themes in total, focusing on keeping safe on the road, or near water, or near fireworks, or from falls or keeping safe near hot things (burns safety); and the risks, control measures and responses associated with them. Each pair of Year 10 students delivered their prepared lesson to their identified group of (six or seven) Year 2 pupils in the primary school, 8 and 9 weeks after commencement of the project. The lessons took approximately 30 min each.

The primary school was monitored to identify any safety interventions, i.e. road safety, bicycle safety, etc., that were being implemented in the school routinely, or at the school's request, during the study period—none were identified.

Data collection tools and procedure

Qualitative data

The process evaluation comprised two components. First, an evaluation of feasibility involving interviews with teachers: semi-structured, audio-recorded face-to-face interviews were conducted post-intervention with the secondary school Year 10 teacher and primary school Year 2 teacher involved in the study. The aim of the interviews was to explore the teachers' perceptions of the project, its perceived advantages and disadvantages, and any barrier or facilitators they had encountered. Second, user perceptions concerning the acceptability of the project were obtained using diaries. It was anticipated that diaries would

also function as an educative tool to help develop reflective skills in Year 10 students. All 22 Year 10 students involved in the project were given a diary at the beginning of the project and asked to write in them following each CSP lesson, in order to provide an ongoing personal account of the project. The diaries contained, on the inside front cover, an explanation of what was required to be written and why. To maintain anonymity, diaries were allocated an ID number. Year 10 students were reminded on a weekly basis to complete the diaries following each CSP lesson. Completed diaries were collected at the end of the intervention period.

Quantitative data

The impact of the project on Year 2 pupils' knowledge about safety and risk awareness was measured at baseline, immediately post-intervention and at the 2-month follow-up using the Draw and Write technique (Williams *et al.*, 1989). Year 2 pupils were divided into small, mixed-sex groups according to the safety topic they were being taught. Each small group was given either a room or screened off area within the school. All pupils were given a Draw and Write sheet specifically designed for their topic area. They were initially asked to write their names on the sheets and if they were a boy or girl; names were then allocated an ID number in order to maintain anonymity. Due to the number of topic areas it was not possible for the researcher alone to administer all Draw and Write evaluations as they were delivered simultaneously. Therefore, four intervention trainers were seconded to assist in the administration of the Draw and Write to the Year 2 pupils. Using a script, *all* children were given the same introductory information. Following the introduction, children in each of the topic areas were invited to answer four questions on their particular safety topic and given 4 min to record their answers (2 min for drawing and 2 min for writing). An example of a 'water safety' question was 'Draw a person doing something dangerous near the water', then 'write down what they are doing'. The questions were designed by the researcher in collaboration with a Draw and

Write expert from Southampton University. Following completion all sheets were gathered and given to the researcher. This procedure was repeated using the same intervention trainers and researcher immediately following the intervention and 2 months post-intervention.

A 'smiley faces' scale designed specifically for this study was used to gauge whether the Year 2 pupils enjoyed the project. The survey consisted of a sheet displaying three smiley faces, scored using a three-point response: good, OK and not good. Sheets were given out to all Year 2 pupils who took part in the CSP. The Year 2 pupils were asked to colour in the face that best described how they felt about doing the project. All sheets were collected on completion.

The impact of the intervention on Year 10 students was assessed using two standardized instruments. Self-esteem and locus of control were measured at baseline and immediately post-intervention, using the Self-esteem Scale (Rosenberg, 1965) and the Locus of Control Scale for Children (Nowicki and Strickland, 1973). Both measures were self-administered.

Data analysis

Qualitative data

The researcher undertook the analysis of teacher interview data by hand. Two copies of each interview were created. On one copy marginal and reflective remarks were noted; on the other, categories and codes were developed. Data were then decontextualized, literally 'cut up' and then 'clumped' together to form themes.

The large amounts of text generated by the Year 10 diaries were transcribed into Microsoft Word and then imported into NUD*IST 5 in text format for thematic analysis.

Quantitative data

To avoid the issue of misinterpretation of the Draw and Write, the work was sent to Southampton University for interpretation by an expert in the field of children's drawings and writing. These were returned in number format on Microsoft

Excel spreadsheets for the researcher to quantify and categorise. Descriptive statistics and proportions were used to analyse these results.

Self-esteem and locus of control data were coded and entered into SPSS. Data analysis was undertaken using the Wilcoxon signed-ranks test.

Results

Qualitative data

Interviews with teachers

The idea of peer tutoring an accident prevention and risk awareness project was perceived in a very positive light, as was the transferable nature of the CSP to other years. Recurrent themes were that it was good for the students' confidence, and that the structure and organized nature of the project were selling points for overworked teachers.

Perceptions of the project. It was suggested that peer education was a good way of learning for both age groups:

I think it's a great idea, I'm very positive about it...we definitely want it again next year. [Year 2 teacher]

Fantastic! ... It worked really well.... I want it next year. [Year 10 teacher]

Following the CSP the Year 2 teacher had very positive responses from the Year 2 pupils:

They loved it, I know as they came up and said 'when are they [the Year 10 students] coming again?' and were disappointed when I said we would have to wait and see. [Year 2 teacher]

Perceived advantages/disadvantages. One of the main advantages that the teachers perceived was the transferability of the project to other year groups:

...we are going to do it again next year for the Year 11s teaching the Year 7s. [Year 10 teacher]

Both teachers thought that the children in both year groups had learnt from the experience and that it was also fun, i.e. the Year 2 pupils disseminated what they had learnt in an assembly for their year

group. It was also felt that the lessons provided to Year 2 pupils represented a clarification and reinforcement of their existing knowledge. It was felt the Year 10s experienced not only fun, but an increase in their sense of self-worth:

No I think they definitely, definitely learnt from it. We had an assembly, it was fun and they came up with very clear things like 'when I burn myself I must put it under the cold tap for 10 minutes'.... It clarified things which I think some of them sort of half knew vaguely. [Year 2 teacher]

They learnt so much...it made them feel good about themselves. [Year 10 teacher]

Structure, organization and the CSP's ability to reduce teacher input and increase student input were key elements discussed by both teachers:

The way the project is structured...teachers do not have to put much in as it's student led...you don't need loads of resources.... [Year 10 teacher]

The Year 2 teacher considered the teaching materials to be very appropriate. In addition she felt the timing for such an intervention was appropriate:

It's just right for the Year 2s and a good time to have it...teaching materials seemed appropriate...seemed good. [Year 2 teacher]

Barriers and facilitators to the project. Both teachers' views were sought on how they would feel about the project if it were to be part of the National Curriculum. They both emphasized the good structure of the project. There was also positive comment about National Curriculum implications, and the possibility of children undertaking the project and being assessed for it.

Love to have it! If only when children started Year 10 they could walk into something as good and well structured as this, it would be great. Also for them to be able to do a project and get assessed for it. [Year 10 teacher]

Yes we would, absolutely [like to have it as part of the National Curriculum]. [Year 2 teacher]

Teachers were asked if they would prefer internal or external facilitation of the project. This question raised issues about delivery and sustainability. Both teachers appeared to prefer the idea of an external facilitator delivering the project as this increased its professional status. Resources were a key issue if teachers were to be trained.

Areas thought to require modification included: evaluation, reflection and 'closing the loop' or revisiting what they had learned. Both teachers felt that the links with the National Curriculum and with the secondary school were of primary importance. The Year 2 teacher suggested finding as many National Curriculum links to the project as possible. Disruption was not seen as a potential problem if the structure and planning of the project were maintained. Movement of pupils was also not seen as problematic to the delivery of the project.

Diaries with Year 10 students

Despite reminders to complete the diaries, only 13 diaries were returned out of a possible 22. Overall, the project was perceived very positively, despite some pupils' initial reservations.

Perceptions of the project. Of those Year 10 students who returned their diaries, most perceived the project as enjoyable. No pupil gave an unfavourable view.

Today we went down to the primary school! I thought it was brilliant and we stuck by our lesson plan almost exactly. [Diary 5, F]

Brilliant!! I loved every minute of it. [Diary 1, F]

It's been great! I wouldn't change anything! ...and everyone pretty much said it had gone well.... This is gonna be my last entry, so I just wanna say this was a great project and I actually learnt some stuff too. [Diary 2, F]

Five pupils (38%) out of the 13 who returned their diaries spontaneously commented that they would like to repeat the experience.

A number of the pupils found the project challenging:

Today we started thinking more about the activities we were going to do with our group of children. This was more difficult as we had to come up with a couple of good ideas on our own on how we were going to get the information across...not sure if they will fit into half an hour. [Diary 5, F]

It's harder than I thought to think of how to teach them things in a way they will understand it and also enjoy themselves. [Diary 11, F]

We've got half an hour to teach the kids safety, so it's harder than I thought. Half an hour! What can we do? [Diary 2, F]

As the project progressed the need for planning was the most commonly cited comment. Twelve (92%) mentioned planning what they were going to do, how they were going to do it and when they were going to do it. One pupil was actually surprised at the amount of planning that was required:

But there's more planning and preparation than I thought we would have to do. [Diary 11, F]

Ten pupils said they would recommend the project to others, as it was fun but hard work. They also said it was a great experience and had boosted their confidence:

I've been going on about Tuesday [the teaching day] all week, (it's now Sunday!) I think everyone is getting bored with what I say now! It was great though, I had really good fun and I hope other people get to have a go! [Diary 1, F]

I would recommend this project to everyone. It is great fun and you gain a lot of confidence. [Diary 4, F]

I would recommend this to anyone who would like to work with kids. It's a great opportunity to take and the hard work is definitely worth it. [Diary 1, F]

It's a great experience and builds confidence. [Diary 7, M]

I felt really pleased with myself. I feel I have achieved something really good and I hope I will

remember what a great experience it was in the future. [Diary 3, F]

During some of the lessons Year 10 students were given safety sheets. These were A4 sheets containing statistical evidence about different types of accidents. On another occasion they watched a video of Year 2 pupils being given a lesson on dinosaurs. Some of them commented on the fact that they were themselves learning, not only from the video about how a Year 2 pupil learns, but also from the information they were given in the safety sheets.

I learnt they [Year 2 pupils] couldn't write a huge amount, they might need your help to discuss things. [Diary 5, F]

The video was Year 2 pupils at school. It was interesting as it showed us how they behaved in class and that they were very alert. [Diary 7, M]

...more safety sheets today. These were pretty interesting though—accident statistics and stuff. [Diary 2, F]

Some of the pupils commented on the need for negotiation with their partner:

...a bit worried on how we were going to work as a pair because we are different. Me and my partner had something we didn't agree with but we sorted it out. [Diary 12, F]

We brainstormed ideas.... My partner and I sometimes had disagreements in this part of the project. We used both our ideas so all was OK. [Diary 10, F]

The diaries also demonstrated the way in which Year 10 students' perceptions about the project changed over time. The following observations were taken from the diary of a female student who began the project with considerable scepticism.

Tue 11 Sep I only came to get out of tutorial...it didn't sound too bad but I'll have to wait and see.

Tue 18 Sep It was pretty good today, actually.

Tue 25 Sep Anyway it was great today.

Tue 20 Nov Well the 10 weeks are up. It's been great...last meeting. Sniff. It's really fun and worth the experience...this was a great project.

Another student wrote:

We have done our assembly [presented to the entire year what they had done] in front of our year getting our certificates. This was nerve-racking but worthwhile as it made a lot of people come up and say 'Oh I wish I had done that'. This was when I realized how a teacher must feel when their entire class still talk about the lesson weeks after. It is brilliant to think me and my partner have given them something that could save their lives. [Diary 9, F]

A number of pupils suggested more time was needed, and possibly an additional lesson per week.

It was a great project; I wish it had been for longer. [Diary 9, F]

I would have liked more than one lesson a week. [Diary 1, F]

We need more time, one lesson isn't enough. [Diary 7, M]

Quantitative data

Figure 1 shows the results for the Draw and Write. It should be noted that Figure 1 only includes the

results for children who provided data at baseline. All 'water safety' data were combined, as were all 'road safety' data as the key messages were the same. The results suggest that young children, 6–7 years old, can learn from older pupils.

Forty Year 2 pupils completed the smiley face consumer satisfaction survey. The results show that 80% ($n = 32$) of the children thought the CSP was 'good' and that the remainder thought it was 'OK'.

There was no significant difference in either the self-esteem or locus of control of Year 10 students between the two time periods. These results also show that on the internal–external continuum, the Year 10 students involved in this study tended to have a more internal locus of control orientation.

Discussion

The main aim of this study was to assess the feasibility of implementing a school-based injury prevention project and to explore the effects of cross-age tutoring on pupils in both age groups. Although this was a small-scale pilot study, the results suggest that this form of intervention is feasible to teach accident prevention and risk awareness for both primary and secondary schools, as long as the schools involved are in close proximity to one another.

The emerging themes of this study were that the CSP is:

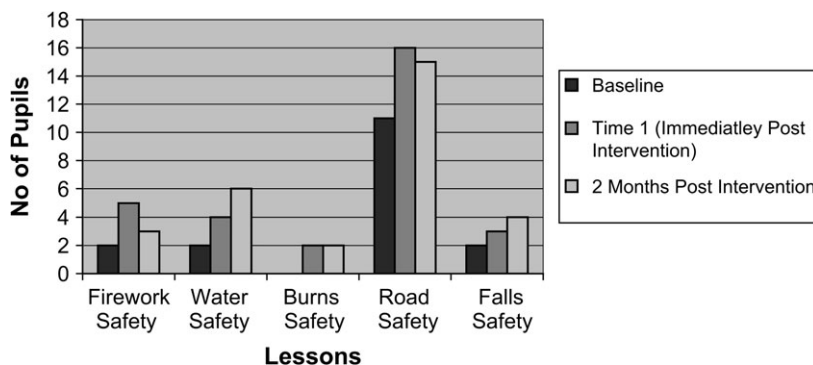


Fig. 1. Number of Year 2 pupils answering key questions correctly.

- A timely resource that would fit well into schools and cause little or no disruption.
- A resource that both primary and secondary teachers would like to incorporate as part of the National Curriculum.
- An appropriate way of fulfilling the Year 10 students' citizenship lessons.
- A way of increasing levels of self-confidence among Year 10 students.
- An interesting and fun way of teaching Year 2 pupils about accident prevention and risk awareness.

Descriptive diaries were extremely useful and illuminating, particularly with regard to the development of the project, e.g. the need for more than one lesson per week and the need to evaluate what the Year 10 students had undertaken. Overall, the data from the diaries showed that there was a general consensus that the CSP was good. The Year 10 students found the project challenging, fun and confidence building (Topping *et al.*, 2003), and felt that they gained knowledge and skills through participation (Cohen *et al.*, 2000).

One of the problems encountered with the diaries was a decline in motivation to write in them, even though diaries were anonymous and the students were encouraged to fill them in after each CSP lesson (Paterson, 1995). Although the Year 10 students were not formally evaluated with regard to changes in their knowledge, it is probably fair to say that there would have been an increase in their understanding of accident prevention and risk awareness due to the fact that one of the best ways to learn about a subject is to teach it to someone else (Topping and Ehly, 1998). The Year 10 students had 8 weeks of doing this, which may have aided long-term retention and a more comprehensive understanding of the subjects they taught (Cohen *et al.*, 2000).

The Draw and Write element of the study was intended to establish how much and what aspects of the safety lessons the Year 2 pupils had learned and retained. The Year 10 students were expected to communicate key messages in the areas they had chosen to teach. The results of the Draw and Write

indicate that most groups managed to do this with relative success. In the pre-intervention stage of the study some of the Year 2 pupils clearly had a wealth of knowledge about certain areas of how to keep themselves safe. This knowledge had increased in most areas post-intervention. At 2 months post-intervention, however, some of the Year 2 pupils appeared to be bored with being asked the same questions and this may well have affected their responses. This may be common with this instrument, particularly when used repetitively with this age group.

With hindsight it might have been more useful to carry out guided group interviews with some of the Year 2 pupils to discuss what they thought about the project, while also incorporating a discussion about what they had learnt. This would have involved a more descriptive approach and might have thrown greater light on Year 2 pupils' views of the peer tutoring process, while at the same time validating some of the findings in the Draw and Write.

While the qualitative data examined in the diaries suggests that participation in the CSP 'boosted the confidence' of the Year 10 students, this may not be the same as self-esteem, which is a more stable and long-term trait. The lack of impact on self-esteem using the standardized measure may well reflect the fact that the self-esteem of the participating children was high at baseline. Similarly, the lack of change in locus of control may be due to the fact that it is considered a stable trait and unlikely to be influenced by such a brief intervention. This suggests that future evaluation of interventions of this nature should pay careful attention to the type of outcome assessed and the instruments used.

Conclusion

Caution should be exercised in interpreting these results as this was a small-scale pilot study. However, the findings suggest that school-based injury prevention programmes using peer-led teaching are both feasible and acceptable to pupils and teachers. The results also suggest that there is now a need for

a larger study to provide the necessary evidence concerning the effectiveness of the CSP, not only in improving knowledge about accidents, but also in reducing the incidence of unintentional injuries. A process evaluation should be included to obtain further information about how and why peer education works, and to gain a better understanding of some of the quantitative data. The fact that only those Year 10 students with relatively high self-esteem and locus of control volunteered for the study highlights the need to find a way to involve those students who would truly benefit from taking part in such a programme.

The CSP continues to be used by a number of secondary and primary schools in Oxfordshire.

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