Evaluation of the Safe Learner Pilot

Final Report

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Executive Summary

Research commissioned by The Learning and Skills Council (LSC) in 2001 to investigate learner health and safety culminated in the development of the 'safe learner' concept. The LSC subsequently developed the safe learner model, based on that work.

In 2005 the LSC piloted the safe learner model. Organisation of the pilot was undertaken by ENTO. Eleven education and training providers agreed to participate in the pilot. The aims of the pilot were to ensure that:

- the processes and procedures meet the requirement of protecting and supporting the learner through providing the necessary information and awareness of health and safety in the workplace
- the model helps *training providers* understand and exercise their responsibilities
- the model helps *placement officers/advisers* understand and exercise their responsibilities
- the model helps *workplace supervisors and employers* understand their responsibilities in safeguarding the health and safety of learners, and
- the model is sufficient to allow the LSC to demonstrate that they have carried out their duty of care in a responsible and proactive manner.

In 2005 the Institute for Employment Studies (IES) was commissioned by the LSC to determine the extent to which the model was successful in raising learner awareness and knowledge about health and safety. This document reports the design, conduct and outcomes of that evaluation of the impact of the pilot on learner knowledge.

Under ideal conditions, evaluation would assess the impact of training on behaviour in the long term. However, this was beyond the resources available. Noting this limitation, the decision was taken to base the evaluation on responses to a questionnaire about health and safety. However, the questions would be designed to focus as much as possible on behaviours – what the learner should do in certain

situations. While these remain essentially questions about knowledge, they are questions about how to behave in potentially dangerous situations. If learners are aware of what they should do in certain situations, there is at least the potential that they will take the correct action if placed in that situation in the future. In the analyses, these are referred to as 'behavioural' items.

Performance of the safe learner sample was compared with that of another, similar, group of learners who were not participating in the safe learner pilot. Therefore, a comparison sample of learners, matched, as far as possible on age, gender and type of learning programme was recruited.

Seven of the safe learner sites provided 103 learners for the evaluation. Five of the safe learner sites also recruited a control group matched as far as was possible to the safe learner group. Two sites nominated companies that they felt trained apprentices similar to their own group. The companies agreed to participate in the evaluation and comparison (control group) learners were recruited at those sites. A further group of comparison learners was recruited from a college that was not participating in the safe learner pilot. In total, 129 learners were recruited to the control group.

The LSC had agreed with learners participating in the safe learner pilot that they would receive a reward of £20 for participating in the pilot and undertaking the test. Learners recruited to the control group were given a £10 reward for participating in the test.

The test instrument was compiled and refined with assistance from tutors and health and safety managers at the participating safe learner sites and from individuals in the National and Regional LSC Health and Safety teams. The test instrument had a multiple choice format and there were 28 health and safety questions in the final version of the test. Fifteen of the questions were 'behavioural' in nature, that is, they related to what individuals should do in dangerous or potentially hazardous situations. In addition to circling the correct answer, learners were required to indicate their level of confidence that the answer they had given was correct. They were then asked if their tutor or supervisor had told them about the issue covered by the question.

The test was administered in early February 2006, when the learners had been registered on the safe learner pilot for around four months. By the start of April, 96 questionnaires had been received from the safe learner sites, and these were entered into the analyses. A further seven questionnaires from a safe learner site were received after the analyses had been completed.

Overall, the safe learner group had not performed significantly better on the test than had the control group learners. However, inspection of the data revealed that one of the external control groups had performed significantly better than all other learners, both the remainder of the control group and the safe learner group ($f = 14.58$, df 2,222, $p < .001$). All subsequent analyses were therefore conducted twice, once with the

overall control group and once with a restricted control group with this group removed. The high performing group subsequently consented to be identified and were made the subject of a short case study included in the final report.

We report the outcomes of the analyses conducted with the restricted control group below; full details of all analyses are given in the full report. In addition, separate analyses were conducted for those sites that had provided both safe learner and control group learners. It is at these sites that the learners can be considered to be the most closely matched. The outcomes of these analyses are reported below, where appropriate.

Re-analysis of the total scores indicated no overall impact of the safe learner programme. When the scores for the five sites that provided both safe learner and control groups were compared (using a two-way analysis of variance, with site and learner group as independent variables) the safe learner programme was found to have had a significant impact ($f = 6.27$, df 1,96, $p = .014$)

When the behavioural items alone are considered, the safe learner group performed significantly better than the control group ($f = 5.44$, df 1,185, $p = .021$). This difference was greater when the scores for the five sites with matched groups were considered ($f = 7.16$, df 1,104, $p = .009$). There was no difference in scores between the safe learner and control groups for the knowledge questions.

One of the hypotheses tested was that the impact of the safe learner programme might result in increased confidence ratings amongst this group. While there was no significant difference in the mean confidence ratings given by the safe learner and control groups for the questions they had answered correctly, comparison of the confidence ratings for items answered incorrectly revealed that the safe learner group had given significantly lower ratings of confidence for the items for which they had given incorrect answers. For the safe learners as a whole this difference approached statistically significant levels ($f = 3.6$, df, 1, 85, $p = .06$) and for the learners at the five sites providing both safe learner and control groups, the difference was significant ($f = 3.96$, df 1,104, $p = .049$). This suggests that safe learners are more aware of the areas in which they lack knowledge than are other learners at those sites.

The participants were asked to indicate whether their tutor or workplace supervisor (or both) had told them about the various issues covered in the questions. Analysis revealed that the safe learner group was significantly more likely to report that their tutor had told them about these issues ($f = 17.3$, df 1,176, $p = .001$). In contrast to this, learners in the safe learner group reported that they had been told about fewer of these issues than did those in the control group; however, this difference was not statistically significant. Note that one group of participants, who were not employed, was removed from this analysis.

For the control group, the number of issues that the tutor had mentioned was modestly but significantly correlated with the learners' score ($R = .26$, $N = 87$, $p = .015$).

However, there was no correlation between the number of issues the safe learner group reported their tutors had mentioned and their score. There was no correlation between the number of items that learners reported their supervisors had mentioned and their score, for either group of learners.

The number of issues that learners recalled tutors and workplace supervisors mentioning largely was not correlated with confidence ratings for correct and incorrect answers. For confidence ratings for answers that were correct there was no significant correlation with tutor instruction except for the control group before removal of the high performing group ($R = .292$, $N = 124$, $p = .001$). The same was true for analysis of the confidence ratings for answers that were incorrect, with confidence being inversely related to the amount of tutor instruction only when the high performing group was included in the analysis ($R = -.331$, $p < .001$), not after its removal. There was no significant correlation between confidence ratings and supervisor input.

The performance data were compared across qualification levels. Those learners studying towards higher level qualifications (levels 2 and 3) had significantly higher scores than those on lower level (level 1 and below) qualifications ($f = 5.66$, df 2,181, $p =<.001$). Once level of qualification is accounted for, the impact of the safe learner programme is demonstrated more clearly ($f = 5,04$, df 1,181, $p = .026$). Consideration of the impact of level of qualification also allows impact on the behavioural questions to be more clearly detected ($f = 10.87$, df 1, 181, $p = .001$).

Those registered on higher level programmes were more confident about their correct answers than were those on programmes at level 1 or below ($f = 12.63$, df 2,181, $p < .001$), while those on lower level programmes were more confident about the questions for which they gave incorrect answers than were those registered on higher level programmes ($f = 38.8$, df = 2,181, $p < .001$).

The analysis indicated that the safe learner programme had resulted in a modest increase in learner health and safety at the participating sites. This was largely as a result of improved performance on the 'behavioural' items, that is, items that asked what individuals should do in situations that are dangerous or potentially hazardous. The programme appears to have most impact on those studying for lower level programmes.

In general, while most of the learners gave lower confidence ratings for incorrect answers than for correct ones, those in the safe learner group gave significantly lower confidence ratings for incorrect answers than did those in the control group. This suggests that the safe learner programme has led these learners to be more aware of the areas of which they are unsure.

A major unexpected result was the level of performance of one of the control groups, which was significantly higher than all other participating groups. The company involved gave permission for its anonymity to be waived, and a short case study is

presented as an appendix to the report based on an interview with the manager and information from the company's ALI inspection report.

The performance of the test items themselves in discriminating between high, medium and low performers on the test is also reported as a separate appendix, as is the test questionnaire. These documents have been made available by the LSC and the researchers to enable any providers or employers who wish to do so to use the test in future.

1 Introduction

Research commissioned by the LSC in 2001 to investigate learner health and safety culminated in the development of the concept of the 'safe learner' (Kerrin, Silverman and Thomson, 2002). The 'safe learner' concept identifies the actions that colleges, providers and others can take to ensure a safe, healthy and supportive environment for learners. Part of this includes a 'safe learning framework', which conceptualises the learner's acquisition of health and safety knowledge, understanding and behaviour as occurring in five stages:

- Stage 1: pre-work (experience) briefing
- Stage 2: workplace induction
- Stage 3: progression and foundation
- Stage 4: the safe learner and worker
- Stage 5: lifelong health and safety learning

Subsequently, the safe learner model was developed, based on this framework. Details of the components of this model are shown in Appendix 1.

In 2005 the LSC decided to pilot the safe learner model. The safe learner model was trialled by 11 providers and managing agents, with around 300 apprentices being registered in total across the trial schemes. Participating providers were required either to demonstrate to the LSC that their existing health and safety provision mapped against, and entirely covered, the details set out within the model, or else to extend their health and safety training so that they could demonstrate that it now fully covered the model contents.

1.1 Aims of the safe learner pilot

The overarching aims of the pilot of the safe learner model were to ensure that:

- the processes and procedures meet the requirement of protecting and supporting the learner through providing the necessary information and awareness of health and safety in the workplace
- the model helps *training providers* understand and exercise their responsibilities
- the model helps *placement officers/advisers* understand and exercise their responsibilities
- the model helps *workplace supervisors and employers* understand their responsibilities in safeguarding the health and safety of learners, and
- the model is sufficient to allow the LSC to demonstrate that they have carried out their duty of care in a responsible and proactive manner.

If the model is found to be successful in raising the awareness and knowledge of apprentices regarding health and safety issues, then ENTO will draw on the model when reviewing the national occupational standards for health and safety and the apprenticeship framework for occupational health and safety.

The Institute for Employment Studies (IES) was commissioned to determine the extent to which the model was successful in raising learner awareness and knowledge about health and safety. This document reports the design, conduct and outcomes of that evaluation of the impact of the pilot on learner knowledge.

1.2 Organisation of the safe learner pilot

Organisation of the safe learner pilot was undertaken by ENTO (www.ento.co.uk). ENTO worked with providers to agree and oversee implementation of the programme and provide advice to the pilot sites.

All providers and managing agents piloting the project were volunteers. They attended an initial briefing session to outline the pilot and were then visited individually by ENTO to explain what would be involved. The funded organisation participating in the pilot would be responsible for ensuring that the learner was provided with briefings, induction and training in health and safety, and for checking that knowledge was gained and retained and identifying any further training needs.

As part of the implementation process a questionnaire was completed by each provider (or managing agent) to determine how their existing processes mapped onto the safe learner model. The questionnaire was designed to:

- determine whether the funded organisations had delivered a pre-work briefing and/ or workplace induction to the learners and, if so, determine how this was delivered
- identify existing good practice and any changes to current practice which may be necessary to meet the requirements of the safe learner model.
- identify information regarding their support needs.

The LSC and HSE have recognised the importance of proper supervision for young people and learners. The organisational arrangements for the supervision of young people were ascertained using the questionnaires.

Within the LSC's Health and Safety Procurement Standards, the assessment of the employer and location must be undertaken by someone who is 'competent' in health and safety. The LSC has produced a statement about competence to help organisations to decide who should carry out these assessments[1]. The questionnaire also looked at the funded organisation's procedure in this regard. Colleges and training providers were also required to record that the employers were complying with their statutory duty to provide an induction briefing on health and safety.

In addition the development of a new unit, within the health and safety suite of National Occupational Standards, for the safe supervision of young people and learners, was discussed within the pilot and the participating employers and funded organisations invited to input to the consultation process.

Participating employers were also asked to complete a questionnaire. This asked about the current arrangements for the workplace induction, training and supervision of learners in relation to health and safety at work was be included in the questionnaires to employers. Feedback from employers regarding their support needs, and the proposed new supervisors' unit, was also sought at this stage, giving an opportunity to take part in the consultation process.

It should also be noted that, during visits to employers and funded organisations, the opportunity was taken to discuss health and safety in the workplace with a sample of learners.

The ENTO report on implementation of the pilot and feedback gained from funded organisations and employers is available from the safe learner website (http://www.safelearner.info/home.htm#).[2]

1.3 Evaluating training

Several frameworks have been proposed as guides for the evaluation of training. The two best-known are those proposed by Kirkpatrick (1967) and Hamblin (1974). Both of these authors advised that any evaluation of training should assess its effectiveness at four levels:

- Reaction – did the participants enjoy the training?
- Learning – did the participants learn anything?

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[1] The LSC has indicated that it will be reviewing the wording of this statement in the near future.

[2] For further details, contact Ian Ward at ENTO.

- Application – did any learning lead to changes in the way the participants perform their jobs?
- Impact – did the training lead to any changes in performance at an organisational level?

In fact, the Hamblin model splits this last level into two, suggesting that benefit from training should be measured both at a local level, such as the production level of the unit in which the trained individual(s) work, and at a fifth level based on a calculation of 'ultimate value' – a cost-benefit analysis to show the financial value to the whole organisation.

1.3.1 Agreeing the evaluating strategy for the safe learner pilot

From the point of view of the safe learner pilots, the most important aspect of the work is whether the learner's behaviour changes in the training setting and at work, *ie* do they behave more safely in the training setting and (for apprentices in particular) become a safer worker as a result of the training? In the Kirkpatrick and Hamblin models this equates to level 3, 'application'. While there may be further benefits for a company – their costs may reduce and production rates increase if they do reduce the accident rate of apprentices – in the eyes of the LSC this would be a secondary benefit, as their main priority must be the health and safety of the learner. However, it should be noted that profitable companies are more likely to take on apprentices, and so this issue should not be seen as merely incidental.

However, while improving the learner's health and safety in work and in training is the overall objective of the work (*ie* by improving their awareness of hazards and their knowledge of the law and the actions to take), assessing changes to behaviours over the long-term, in the work environment, was outside the scope of this evaluation. To assess impact at that level would involve monitoring learners' performance and checking health and safety/incident and accident records over a long period – ideally two years as a minimum. This was beyond the resources of the LSC to fund.

Given this limitation, one suggestion made early on in the development of the project was that the questionnaire could ask learners about their behaviour at work, what their employer expected them to do in certain situations, what route they should take out of the building in case of emergency, *etc*. The difficulty with such questions lies in validating the answers given. Each employing site would need to be visited in order to ascertain whether the answer the learner had given was correct. Again, this was beyond the scope of the project and so, although considered, these types of fact-based questions were rejected because we would be unable to verify the accuracy of their answers.

Noting the limitations in undertaking this work, the decision was taken to focus on level 2 (learning) and to use a questionnaire about health and safety to test the knowledge of the pilot participants. However, the questions would be designed to focus as much as possible on behaviours – what the learner should do in certain situations. While these

remain essentially questions about knowledge, they are questions about how to behave in potentially dangerous situations. If learners are at least aware of what they should do in certain situations, then there is the potential that they will take the correct action if placed in that situation in the future.

1.3.2 Design of the evaluation

In addition to discussing the nature and level of the evaluation, IES also discussed with the LSC the optimal design by which to assess the impact of the pilot programme. The use of a 'before-and-after' test method that would see the learners complete the same questionnaire at the start and at the end of the pilot programme was considered. However, there are two disadvantages to such evaluation designs:

- learners may learn from the experience of taking the test the first time, because they have reason to reflect on a question they might not otherwise have considered (or subsequently be motivated to find out about an issue for which they were uncertain of the answer)
- events in the intervening period between start and end of the programme, that are unrelated to the training, may lead to an increase in awareness of an issue (such as events that occur in the workplace, or TV or radio programmes).

In addition to these points, many factors other than just the quality of training programmes influence the outcomes of that training. The learner's ability, motivation and beliefs will all influence their learning process. For these reasons, IES suggested that the best approach to evaluating the impact of the pilot programme would be to compare the performance on the questionnaire of the pilot group of learners with that of another, similar, group of apprentices at the same point in time and at a similar point in their training programme. This would ensure that any environmental events (such as TV programmes focusing on health and safety or accidents at work) are equally likely to have impacted on both groups. In addition, since both groups complete the questionnaire only once, this removes the possibility of any previous experiential learning from the questionnaire itself. Ensuring that the control group was similar in composition to the safe learner group in terms of gender, age range and types of qualification being undertaken would also minimise the impact that learner characteristics had on their performance.

The design that was finally agreed and adopted therefore consisted of a single assessment of the health and safety awareness and knowledge of two groups of individuals:

- the 'experimental' group, *ie* those who were participating in the pilot programme
- a 'control' group, *ie* a group of people who were not participating in the pilot programme but were otherwise similar to the experimental group in terms of learner characteristics and learner programmes.

This assessment was planned to take place when the learners were approximately four months into their programme.

It is acknowledged that, in addition to learner characteristics, factors such as organisational climate and culture, as well as supervisory support and behaviour, can each serve either to mediate or moderate the behavioural outcomes of any learning. For example, the transfer of safe practices to the workplace can be enhanced by systems that recognise and reward safe behaviours, or discouraged by factors such as ridicule[1]. Those employers who agreed to participate in the safe learner pilot might well be expected to fall into this group, which potentially might lead to the safe learner group being skewed in terms of the characteristics of their employing organisation. However, because the control groups of learners were largely drawn from similar programmes being run by the same or similar organisations, it was hoped that this would mean there would be more similarities between employers than differences. However, we recognise that there are limitations to the design in this respect.

We move on now to give details of the methodology.

[1] For these reasons, the work reported here was supplemented in 2006 by research into the workplace practices of supervisors of apprentices. This work will be reported later in 2006 (Miller and Jagger, forthcoming).

2 Methodology

2.1 Design

The design was an independent groups design[1] with learners assigned to the experimental (safe learner) group by tutors and a second set of volunteer learners recruited to a control group also by their tutors. The dependent measure was a health and safety questionnaire consisting of a short set of questions about their experience of health and safety induction and supervision followed by 28 questions on health and safety. Both safe learner and control group participants received a reward for participation.

2.2 Materials

2.2.1 Designing the health and safety questionnaire

The evaluation instrument was a health and safety questionnaire designed specifically for this study. The rationale for design and content of the questionnaire and details of the development procedure for the instrument are given in the following sections.

Knowledge versus behaviour

The aim of the safe learner model is to improve training in health and safety for learners, on the assumption that any increase in knowledge of health and safety will make it more likely that they will behave safely in both training and employment settings. However, many factors may influence the extent to which individuals behave at work, and in considering safety behaviours this includes supervisory conduct and organisational safety culture. Therefore, under ideal circumstances, the extent to which training has influenced behaviour would be assessed by observation of the individual's behaviour

[1] Although the control group had been matched as well as possible with the safe learner group, we do not feel they fulfil the requirements for the design to be considered a truly 'matched groups' design.

both in the training setting and while at work, as well as by monitoring data such as records of health and safety incidents. This level of evaluation is what Kirkpatrick (1967) referred to as 'application' in his framework for assessing the impact of training.

However, as indicated in the introductory section on evaluation, assessment at this level was outside the resources of this project. We acknowledge that, without assessing behaviour, it is impossible to tell whether any improvements in knowledge brought about by the safe learner model would translate in practice into changes in behaviour. Given that the evaluation could only assess the learners' knowledge, we felt it was important to at least try to address this limitation by ensuring that the questionnaire designed for the research incorporated a proportion of behaviourally-based questions about what the individual should do in certain situations, as well as including questions that tested the individual's factual knowledge about health and safety.[1] Just over half of the questions incorporated into the final version of the questionnaire required the learners to say what they should do in specific situations. In the analyses we compare the two groups of learners' performances on these two types of question as well as overall scores.

Confidence

The safe learner model is being piloted in the belief that it represents an improvement on the way in which health and safety training has been delivered in the past[2]. However, inevitably, it seems to be the better providers, or those who are more active in the health and safety arena, that tend to volunteer for such initiatives.

Therefore, one hypothetical outcome of the work might be that the body of knowledge that the learners acquired on the pilot programme did not differ significantly in nature or extent from that delivered in other programmes; what may, however, differ is the extent to which that knowledge is *reinforced* in the training and work settings, as both providers and employers were required to 'sign-up' to the pilot. One expectation of the safe learner model was that it would bring some consistency to the dialogue that trainers had with employers on the topic of learner health and safety. This in turn could lead to health and safety messages being more consistently conveyed in the workplace as well as at the training site.

If this was the case, then it might be expected that these learners would have more confidence in the likelihood of their answer being correct. For this reason, a five-point Likert-style scale was included to assess the learners' confidence of their knowledge, and

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[1] Any attempt to ask learners about their behaviour at work, or safety procedures at their place of work would require validation of their answers in each workplace, which again, was outside the scope of this work.

[2] Although it must be acknowledged that it was mainly those organisations that were already actively involved in trying to promote health and safety to learners that agreed to participate.

ratings of the learners' confidence levels in the safe learner and control groups were compared in the analyses, for both correct and incorrect answers.

Source of knowledge

As indicated above, learners may gain their health and safety knowledge from several sources, amongst these sources being their tutor and their workplace supervisor. Given that the safe learner pilot asked employers as well as training organisations to sign up to the scheme, we were interested in determining whether the safe learner group were any more likely to have information about health and safety reinforced by hearing it from several sources. For this reason, the questionnaire asked learners to indicate if they had been told about this issue (the topic of the question) by their tutor in the training setting and/or their supervisor/manager at work.

2.2.2 Compiling and refining the test instrument

In designing the questionnaire various other factors were also taken into account:

- it should be easy to complete and take as short a time to complete as possible
- it must be written in clear language — many work-based learners have basic skill difficulties
- wherever possible, the design should ensure that any answers gained are unambiguous and suitable for coding as correct or not correct.

To assist in compiling the questionnaire, all providers taking part in the safe learner pilot were asked to contribute questions that they would like to see in a questionnaire 'that assessed whether learners really would be safe in the workplace'. A selection of the questions donated by providers were used to compile the first draft of the questionnaire. At this stage, a majority of questions focussed on behaviours (*eg* 'what should do if you discover something that could cause an accident at work?') while the remainder asked about knowledge (*eg* 'what constitutes a hazard in the workplace?').

The first draft was distributed to all the safe learner pilot sites and LSC contacts. Providers and LSC contacts were asked to check that the 'correct' answer to each question was in fact correct in their view, and whether the foils were realistic. Feedback was received and the questionnaire refined; some more questions were suggested at this stage and these were incorporated. The second draft questionnaire was then re-distributed for comment. Some further amendments were made. The final version consisted of 28 questions, of which just under one-half were knowledge questions and just over one-half were behaviour questions. Each question had one correct answer and three foils.

2.2.3 Final format of the questionnaire

At the start of the health and safety questionnaire was a set of questions that asked the learner in what type of organisation they attended classes (college, training organisation or at their place of work). As the safe learner programme required both trainers and employers to give a detailed induction to learners, the learner was then asked a short set of questions about what they were told when they started their training (*ie* in the college, training company or training centre) and about safety practice at their place of work.

Following this there was a section introducing the questions about health and safety. Learners were asked, first, to tick what they believed to be the correct answer to the question; following this they were asked to indicate their level of confidence that the answer they had just given was correct, using a scale that ran from 1 ('I don't really know if this is the right answer or not') through to 5 ('I am absolutely certain this is the right answer'). Following this they were asked to indicate if they had been told about this issue by their tutor, their workplace supervisor, or both.

The full questionnaire is shown in Appendix 2.

2.3 Participants

Two groups participated in the research: a sample of learners taking part in the safe learner pilot, and a comparison or control group of similar learners who were not participating in the pilot programme. It had been agreed with the LSC that a group of 100 learners on the safe learner programme would take part in the evaluation. In turn, this would require a group of 100 similar learners to be recruited to participate as the 'control' or comparison sample.

There were two main stages to this part of the work: profiling the sample of safe learners followed by identifying and recruiting a control group of volunteer learners. Details of the recruitment process for both groups are given in the first section of the Procedure section.

Safe learner group

Seven of the safe learner sites took part in the evaluation exercise, and provided a total of 96 individuals registered on the safe learner programme. The learners ranged in age from 16 – 63 (mean = 19.8). Eighty-three were male and 13 were female. Full details of the profile of the safe learner group (age, gender, and title/subject and level of the programmes on which they were registered) are given in Appendix 3. Participation in the evaluation was a requirement for this group to receive a reward and certificate, agreed in advance with the LSC (see Reward section, below).

Control/comparison group

One hundred and twenty-nine learners were recruited to the control group. One hundred and thirteen were male and 16 were female. Their age range was 16 – 56 (mean = 20.6 years). They were drawn from a total of seven organisations: four of the safe learner sites; two training organisations nominated by safe learner organisations; and one college nominated by the LSC. Full details of the profile of the control group (age, gender, and title/subject and level of the programmes on which they were registered) are given in Appendix 3.

With this group, participation was voluntary, in response to an offer of a reward (see Reward section, below).

2.3.1 Rewards for participating individuals and institutions

Safe learner group

To reward the learners for their participation in the safe learner programme, the LSC had already agreed in advance of the evaluation to give each apprentice a £20 voucher and a certificate of completion of the programme at the end of the pilot. Receipt of the reward was to be contingent upon the learner completing a questionnaire at the end of the programme, that is, the health and safety assessment questionnaire.

Control/comparison sample

As an incentive to encourage learners not participating in the safe learner pilot to participate in the assessment, a £10 gift voucher of their choice was offered to learners who agreed to undertake the test. Before taking part in the test, learners in this group signed a form giving their agreement to participate and indicating their voucher preference.

Institutions providing control group learners

Where organisations which were not participating in the safe learner pilot, agreed to recruit a control group of learners and administer the health and safety test, a small administration fee was paid to reimburse them for their assistance with the work. In addition, where safe learner sites agreed to recruit learners outside of their safe learner group(s) to serve as a comparison group(s), and administer the test and rewards to this/these groups, a small fee was also agreed with these organisations, as this work was outside what they had already agreed with the LSC as part of the safe learner pilot.

3 Procedure

There were two main stages to the evaluation procedure. The first stage was to obtain details of the overall profile of the individuals registered on the pilot programme at the participating sites and then recruit a control group matched as closely as possible to this group. The second stage was to administer the test and distribute the rewards to the learners.

3.1 Identifying and recruiting the participant groups

3.1.1 Profiling the safe learner group

Originally, around a hundred apprentices were expected to be enrolled on the pilot programme. In the end, around 300 learners were enrolled across the 11 safe learner sites. Not all were apprentices: some were enrolled on the young apprenticeship programmes which were being piloted at the time with young people in schools (aged 14 – 16) and some were on foundation or entry level programmes. Some were enrolled indirectly via a managing agent. One group was enrolled through NACRO.

Out of the 11 sites, seven organisations were identified to participate in the evaluation. Those eliminated from the evaluation group were excluded where it would prove too difficult to recruit a comparison/control group and where the learners had not been recruited directly by a training provider (*ie* a managing agent had placed them with a range of providers). The safe learner participant group consisted of all learners recruited to the safe learner pilot groups at these seven sites[1], and who had commenced their learning programme in September 2005.

[1] There was one exception to this: one site was piloting the safe learner model with three learner groups, one of which was a group of over a hundred learners. The size of this group was too large to accommodate within the scale of this evaluation and so only the two smaller groups at this site were included.

Because the LSC had already reached agreement with the learner groups before IES commenced the evaluation, we did not have to 'recruit' the safe learners; they had already agreed to participate prior to commissioning of the research.

3.1.2 Recruiting the control (comparison) sample

Once the details of the learners at the seven safe learner sites had been obtained, the next stage was to identify and recruit a group of learners with a similar profile, and who were not participating in the safe learner pilot, to act as a control group. Ideally the control or comparison learners needed to be:

- drawn from the same regions as the 'experimental' group
- drawn from the same age range and gender as those in the 'experimental' group
- registered on, and at approximately the same stage of, the same apprenticeship programmes.

In order to recruit this group of individuals three main strategies were adopted:

- first, all providers participating in the safe learner pilot were asked if they had learner groups not participating in the safe learner pilot who would constitute an appropriate comparison sample
- second, those providers who were not able to provide a comparison group were asked if they could identify other organisations in their area that recruited and trained a similar profile of learners to theirs in the same subject
- lastly, where providers were unable to suggest a local provider with a similar learner profile to their group, the LSC Health and Safety staff in National Office and in the Safe Learner regions were asked to identify provider organisations who offered training in the appropriate subjects and levels.

Four of the seven organisations were able to provide a control group of learners. Two other training organisations participating in the safe learner programme were able to suggest companies in their area who typically recruited and trained a very similar profile of learners to theirs. To recruit control samples for the remaining two safe learner sites we worked with the LSC to identify providers who offered programmes in the same areas as the remaining two organisations. Two colleges provided the remainder of the control/comparison group learners.

To recruit the control group of learners, providers told their learner groups about the health and safety survey and that participation was voluntary and that they would remain anonymous. They were given an outline of why IES was asking them to take part and were told there would be a reward of a £10 voucher of their choice. A sign up form (Appendix 4) was used to obtain their agreement prior to their participation in the study. They also indicated their choice of voucher on this form.

3.2 Administration

In late January – early February both the safe learner and the control groups of learners undertook the health and safety test.

In both the safe learner pilot organisations and the control organisations, tutors were asked to hand out, oversee and collect in the questionnaire and return it to IES. Packs of questionnaires were sent to the named contact at each site along with one or more reply-paid envelopes, instructions for administration and return, and answer sheets to give to the learners after completing the test. Where notification had been received in advance of the learners' voucher preferences they were sent the appropriate set of vouchers; where notification had not been received a duplicate sign-up sheet (Appendix 4) was sent out with the questionnaires. Vouchers were then sent out to these sites following receipt of their questionnaire packs.

The administration instructions are shown in Appendix 7. Slightly different versions were written for the safe learner and the control groups/sites in terms of the explanation which was given for their participation.

The answer sheet, handed out to learners following completion of the test, is shown in Appendix 8.

4 Results

Ninety-six questionnaires were returned from the safe learner group and 129 from the controls. One hundred and ninety-six males and 29 females had completed the test. Of these, 124 reported they attended a college for training; 51 said they attended classes at a training organisation; 27 attended classes organised and run at their employers' premises; and 20 said they had received provision across two or more sites (*eg* at a training organisation and their employer).

4.1 Induction and supervision of learners

Learners were asked whether, when they started their training, they had been told about emergency arrangements, significant hazards, safe working practices for their area of work and who they should contact over health and safety problems. Table 4.1 shows the responses of the safe learner and control groups.

Table 4.1: What learners were told by their trainers

	Safe learner group		Control group	
	Yes	No	Yes	No
About emergency arrangements	94	2	127	1
Significant hazards	95	1	125	3
Important safe working practices	96	-	128	-
Who to contact about H&S	94	2	123	5

Source: IES H&S survey, 2006

The data show that the very great majority of both groups had been told about these key aspects of health and safety by their tutors.

Next, learners were asked three questions about their place of work or placement organisation: whether they had been told anything about health and safety before starting work, whether their supervisor talks to them about safe working practices, and whether they had ever been left unsupervised while at work. The proportions answering yes or no to these questions are shown in Table 4.2.

Table 4.2: The experience of learners at work

	Safe learner group		Control group	
	Yes	No	Yes	No
Told about H&S before starting work?	82	3	113	4
Supervisor talks to you about safe working?	79	6	111	6
Ever left unsupervised?	51	34	85	32

Source: IES H&S survey, 2006

A few individuals in both groups felt that they had not been told about health and safety before starting work and that this was something their supervisor neglected to talk to them about, but the majority reported that this did happen. The figures indicate that a majority of learners in both the control and the safe learner groups were left unsupervised at times in the workplace. However, the questionnaire did not ask for how long, or how frequently, and so we are unable to tell whether this means they were left for a few minutes or to work alone for long periods of time. Further investigation of this point would be valuable.

4.2 Findings from the health and safety test

There were three sets of dependent measures: whether the answer to each question was correct or incorrect; the learner's confidence in their answer to the question; and whether they had been told about the issue in question by their tutor (in the training setting), their supervisor (in the work location) or by both these individuals. These data were first analysed to answer three primary questions.

- Did those learners in the safe learner group perform better than those in the control group on the health and safety test?
- Were those in the safe learner group more confident about their knowledge of health and safety issues than learners in the control group?
- Were those in the safe learner group more likely to receive instruction from both their trainers and their supervisors than those in the control group?

In addition, there were three subsidiary questions of interest. The health and safety test had contained two broad categories of question: around one-half were 'behaviourally-based' (*ie* asked for responses to a scenario) and the remainder were knowledge-based (*ie* asked what was the definition of a hazard). We were, therefore, interested in seeing whether any difference in performance was across-the-board, or restricted to one or other categories of question. Therefore, one of the subsidiary questions was:

- Was any difference in performance between the safe learner and control groups restricted to either the behaviour-based questions or the knowledge-based questions?

Secondly, since the safe learner pilot had required employers as well as providers to sign up to the initiative, we were interested in discovering whether reinforcement of aspects of health and safety by multiple sources would be related to their overall performance on the test. Therefore the second subsidiary question was:

- Was there any difference in performance between those who reported being told about these issues by more than one person, in either the safe learner or control groups?

Lastly, we were also interested in whether the amount of instruction individuals receive increases their confidence in their own knowledge of health and safety. Therefore the final subsidiary question was:

- Did those who reported higher levels of instruction and reinforcement from both trainer and supervisor have higher confidence levels about their knowledge?

We now move on to report the analyses undertaken to answer these questions and the results of the analyses.

4.2.1 Did the safe learner group perform better than the control group on the health and safety test?

Overall levels of performance on the test

The distribution of scores across all participants in the safe learner and control groups is shown in Table 4.3.

Table 4.3: Distribution of scores for the safe learner and control groups

	Mean	Minimum	Maximum
Safe learner group	21.1	10.0	27.0
Control	21.3	7.0	28.0

N (SL) = 96; N (C) = 129

Source: IES H&S survey, 2006

The performances of the safe learner and control groups were first compared using analysis of variance to test for significant differences between individuals' total number of correct answers. As might be expected from the very small difference in means, there was no significant difference between the scores ($F < 1.0$, p = n.s.).

Inspection of the distribution of scores shown in Appendix 5 (performance of learners within the eleven participating organisations) shows that the learners from one particular control group had performed far better than any other group (average score = 24.2; highest mean for all other groups 22.7). It should be noted that this organisation commented at the outset that they were 'very hot on health and safety' and suggested they might not make a good comparison group for this reason. Despite this, since they

had been nominated by one of the safe learner sites as a potential comparison organisation, we included them within the control group. However, as inspection of their data revealed, they were correct in their assertion that their health and safety training was of a high standard. A three-group analysis of variance confirmed that this group's scores differed significantly from those of both the other controls and the safe learner group ($F = 14.58$, df 2,222, $p < .001$).

This is further illustrated by Table 4.4, in which the distribution of performance levels across the three groups (safe learner group, high-performing control group and remainder of control group) is shown.

Table 4.4: Distribution of safe learners and controls into high, medium and low performance categories (in per cent)

	Safe learner group	Control group (minus high performing group)	High-performing control sub-group	Total
High (score 23 or above)	40	35	82	45
Medium (score 19 – 22)	40	40	16	36
Low (score 18 or below)	21	25	3	20

N (SL) 96 = N (C)=91 N (HPC)= 38. Note: rounding has led to total sum of 101 per cent

Source: IES H&S survey, 2006

It can be seen that the high-performing group has double the proportion of learners falling into the high performing category than the other two groups; conversely, it has only three per cent of its learners falling into the low performing group. Therefore, this group's scores is not being skewed by a few high performing individuals pushing up the top end of the score distribution; its learners are more consistently attaining higher scores.

Therefore to explore the extent to which this group had skewed the evaluation, their scores were removed from the control group and the analysis of overall scores was run once again. The re-calculated means, minima and maxima are shown in Table 4.5.

Table 4.5: Distribution of total scores for safe learner and control groups, with outlying control group removed

	Mean	Minimum	Maximum
Safe learner group	21.1	10.0	27.0
Control	20.1	7.0	26.0

N (SL) 96 = N (C) = 91

Source: IES H&S survey, 2006

Analysis of variance for independent groups on this restricted data set revealed that, for the total number of correct answers, while the difference in scores had increased, with the safe learners scoring marginally higher than the control group, this comparison still did not achieve a conventional level of statistical significance ($f = 2.78$, df 1,185, $p = .097$).

Lastly, five of the safe learner sites had provided control groups from amongst their other groups of learners. These sites are of most interest from the point of view of assessing the impact of the safe learner programme on trainer provision. A total of 106 of the 225 learners within the evaluation came from these sites. The data for these safe learners are shown in Table 4.6 and illustrated in Figure 4.1.

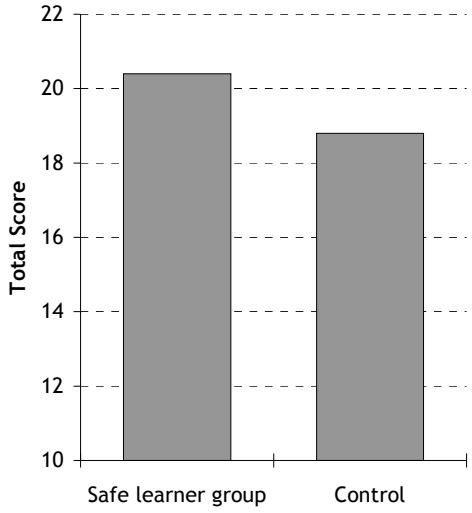
Table 4.6: Distribution of total scores across sites supplying both safe learner and control groups

	Mean	Minimum	Maximum
Safe learner group	20.4	10	27
Control	18.8	7	26

N (CL) = 53; N (C) = 53

Source: IES H&S survey, 2006

Figure 4.1: Distribution of total scores across sites supplying both safe learner and control groups



N (SL) = 53; N (C) = 53

Source: IES H&S survey, 2006

An analysis of variance was calculated using only the data from these groups of learners. Although the mean for the safe learner group was higher than that for the control group (20.4 and 18.8, respectively), this difference was not statistically significance (f = 2.60, df 1,105, p = n.s). However, when training site was entered as a second independent variable, this accounted for much of the extraneous variance between the groups and at this point the difference between the safe learners (SL) and controls (C) emerged as a statistically robust factor (F (training site) = 39.81, df 4,96, $p < .001$; F (SL or C) = 6.27, df 1,96, p = .014). Based on the sample of safe learner and controls from these five sites, and taking into account performance differences between the sites, the safe learner programme had a modest, but significant, impact on health and safety knowledge.

Was there any difference between the two groups' performance on the behaviour-based questions and the knowledge-based questions?

We were particularly interested in determining whether the safe learner programme potentially had an impact on behaviour as well as knowledge. If so, this would suggest that the safe learner group would be more likely to be able to act appropriately in unsafe or emergency situations. For this reason, separate scores were assigned for the 'behaviour-based' and 'knowledge-based' sets of questions within the questionnaire.

We adopt the same approach here to analysing the knowledge-based and behaviour-based questions as was reported in the previous section: first, we report the analyses for the whole groups of safe learners and controls. Next, we report the analyses with the significantly-higher scoring control sub-group removed ('restricted control'). Lastly, we report the outcomes of the analyses for the five sites that supplied their own control groups. These scores are shown in Table 4.7.

The performances of the safe learner and control groups on the two types of item were compared using analysis of variance. There was no significant difference between the groups' scores on either type of question (Knowledge, $F < 1.0$, p = n.s; Behaviour, $F < 1.0$, p = n.s).

Next the safe learner group scores were compared with those for the restricted control group. While for the knowledge scores, there was no significant difference ($f = .671$, df 1, 185, p = ns), for the behaviour scores however, the safe learner group had scored significantly higher than the control group ($f = 5.44$, df 1,185, $p = 0.021$).

Table 4.7: Distribution of scores for knowledge-based and behaviour-based items for all safe learners, control group and restricted control group

	Mean	Minimum	Maximum
Knowledge-based questions			
Safe learner group	9.0	2.0	12.0
Control	9.2	0.0	12.0
Restricted control	8.7	0.0	13.0
Behaviour-based questions			
Safe learner group	12.2	7.0	15.0
Control	12.1	3.0	15.0
Restricted control	11.4	3.0	15.0

N (SL) = 96; N (C) = 129 N (RC) = 91

Source: IES H&S survey, 2006

Last, the scores from safe learners and controls at the five sites providing both groups were compared. These data are shown in Table 4.8 and displayed in Figure 4.2.

Table 4.8: Distribution of scores for knowledge-based and behaviour-based items across sites supplying both safe learner and control groups

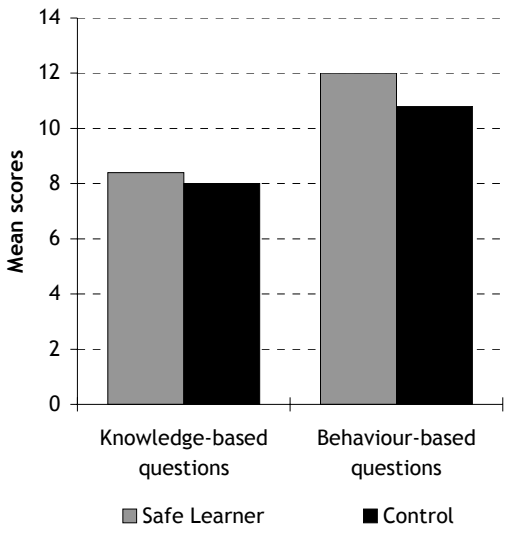
	Mean	Minimum	Maximum
Knowledge-based questions			
Safe learner group	8.4	2	12
Control	8.0	0	13
Behaviour-based questions			
Safe learner group	12.0	7	15
Control	10.8	3	15

N (SL) = 53; N (C) = 53

Source: IES H&S survey, 2006

Analysis of variance indicated that, while there was no significant difference between the safe learner and control groups on the knowledge items, the safe learner groups had performed significantly better than the controls on the behaviour-based questions ($F = 7.16$, df 1,104, $p = .009$). This suggests that, within sites that have implemented the safe learner model, there is a slight but significant improvement in this more behaviourally-based type of health and safety knowledge, that describes how to behave in potentially dangerous or critical situations.

Figure 4.2: Mean scores at sites supplying both safe learner and control groups



N (SL) = 53; N (C) =53

Source: IES H&S survey, 2006

4.2.2 Were the safe learner group more confident about their knowledge of health and safety issues than the control group?

Overall confidence levels

The overall confidence levels of the safe learner and control groups were compared using their overall confidence score (score summed and averaged across all 28 questions) as the dependent variable, using a one way ANOVA with two levels of the independent variable, learner group (SL and C). Mean confidence levels exhibited by the safe learner and control groups across the 28 questions as a whole (and irrespective of whether their answer was correct or incorrect) were identical, at 3.9, just below the scale point equivalent to 'I'm almost certain it's the right answer'.

Next, we move on to consider whether there were any differences in the confidence levels for questions on which their answers were correct or incorrect.

Were there differences in confidence levels for those questions that participants got right or wrong?

To compare the confidence levels of those who gave correct and incorrect answers in the safe learner and control groups, a series of analyses was undertaken. The data set was filtered so that, for each respondent, a mean confidence rating could be calculated for those questions for which their answer was correct, and similarly a mean confidence rating was obtained for those questions for which their answer was incorrect. These data are shown in Table 4.9.

Table 4.9: Mean confidence ratings for questions for which participants gave correct and incorrect answers, all safe learner, control and restricted control groups

	Mean
Correct answers	
Safe learner group	4.1
Control	4.1
Restricted control	3.9
Incorrect answers	
Safe learner group	1.2
Control	1.3
Restricted control	1.5

N (SL) = 96 N (C) = 129 N (CR) = 91

Source: IES H&S survey, 2006

There was no significant difference between the means for the safe learner and control groups for their confidence for items they had answered correctly or incorrectly. There was also no significant difference in the confidence ratings given by the safe learners and the restricted control group for items they had answered correctly. However, the

difference between the safe learners' confidence ratings for incorrect answers and those of the restricted control group approached the level of statistical significance (F = 3.6, df 1,85, p = .06), suggesting some grounds for believing that safe learners were somewhat less confident about their answers than were the controls.

Lastly, we compared the subset of confidence ratings from the five sites at which there were both safe learners and control groups. The means from this sub-set of learners are shown in Table 4.10.

Table 4.10: Mean confidence ratings for questions for which participants gave correct and incorrect answers, across sites supplying both safe learner and control groups

	Mean
Correct answers	
Safe learner group	4.0
Control	3.9
Incorrect answers	
Safe learner group	1.4
Control	2.0

N (SL) = 53 N (C) = 53

Source: IES H&S survey, 2006

Comparison of the confidence ratings for correct answers revealed no significant difference between the groups. However, comparison of the safe learner and control group confidence ratings for incorrect answers indicated that the safe learner group was significantly less confident of their answers for questions where their answer was wrong (F = 3.96 , df 1,104, p = .049). This suggests that safe learners are more aware of the areas in which they lack knowledge than other learners at the same sites.

4.2.3 Sources of information

As the safe learner pilot required both trainers and employers to sign up to the initiative, we were interested in determining whether those in the safe learner group were more likely to report being told about aspects of health and safety than those in the control group. Therefore a set of analyses was conducted that looked at whether there were significant differences in the numbers of respondents in the two groups who reported being instructed on the points covered by the questions.

Respondents' answers to whether they had been told a point of information by their tutor only, supervisor/manager only, or both[1], were summed to give the following sets of scores:

[1] If the learner said that no-one had told them, they were assigned a score of 0.

- the sum of number of issues that their supervisor/manager had instructed them on (∑supervisor)
- the sum of number of issues their tutor had instructed them on (∑tutor)
- the sum of the number of issues that both tutor and supervisor had instructed them on (∑tutor + supervisor).

These sums indicate, for each individual, how many of the health and safety topics were addressed by tutors or by workplace supervisors in the safe learner and control groups, and by both. Three ANOVA calculations were conducted using the ∑tutor, ∑supervisor and ∑tutor + supervisor scores as dependent variable with learner group (SL or C) as independent variable. Again, we have undertaken these analyses three times: once for the whole respondent group, once with the high-scoring control group removed, and lastly, for participants at those five sites which supplied participants in both SL and C groups.

Tutor

Table 4.11 displays the mean, minimum and maximum number of items about which the safe learner, control and restricted control group participants reported that they had received instruction from their tutor concerning the items included in the survey. Here, the data showed that the safe learner group were significantly more likely to have been told about these issues by their tutor than the control group (F = 5.47, df 1,213, p = .02).

Table 4.11: Number of items about which learners had received instruction from their tutor, for safe learner, control and restricted control groups

	Mean	Minimum	Maximum
Safe learner	21.7	0	28
Control	19.0	0	28
Restricted control	16.6	0	28

N (SL) = 96 N (C) =129 N (CR) = 91

Source: IES H&S survey, 2006

The difference between the restricted control and safe learner group was larger, and as would be expected, the difference was more statistically robust also(F =17.3, df 1,176, p < .001).

It is worthwhile also considering the distribution for this variable. In Table 4.12 the proportions of each group that gave a high, medium or low estimate of the number of these issues that their tutor had spoken to them about are displayed.

Table 4.12 reveals that, while the safe learner group said that their tutors had talked to them about the health and safety issues covered by the questionnaire more often than did those in the control group (and vice versa: more of the control group said their tutors had mentioned only a few of these issues than did those in the safe learner group), once

again, the high performing group were both far more likely to fall into the 'high instruction' group and far fewer of this group fell into the 'low instruction' group.

Table 4.12: Proportions of each sub-group that reported that their tutor had told them about a high, medium or low numbers of H&S issues (in per cent)

Number of H&S issues mentioned	Safe learner group	Control group (minus high performing group)	High-performing control sub-group	Total
High	58	33	84	53
Medium	19	14	8	15
Low	22	53	8	32

N (SL) = 96 N(RC) = 91 N (HPC) = 38

Source: IES H&S survey, 2006

Lastly in this section, the means for just the five sites supplying both safe learner and control groups are shown in Table 4.13 and the analysis was repeated for this sub-group. However, there was no significant difference here between the means for each group (F = 1.94, df 1, 97, p = n.s). Given that the difference between the means is not much different from that for the safe learner and control groups in Table 4.11, this suggests that the non-significance of this comparison may be mainly due to smaller numbers in this data set.

Table 4.13: Number of items about which learners had received instruction from their tutor, sites supplying both safe learner and control groups

	Mean	Minimum	Maximum
Safe learner	21.0	0	28
Control	18.6	0	28

N (SL) = 49 N (C) = 50

Source: IES H&S survey, 2006

Workplace supervisor

Table 4.14 displays the mean, minimum and maximum number of items about which the safe learner and control group participants reported that they had received instruction from their workplace supervisor.

Table 4.14: Number of items about which learners had received instruction from their workplace supervisor

	Mean	Minimum	Maximum
Safe learner	11.7	0	28
Control	13.7	0	28
Restricted control	12.0	0	28

N (SL) = 72 N (C) =129 N(RC) = 91 Note that one group of learners (in both SL and C groups), who were not employed and who therefore did not have workplace supervisors, was removed from this analysis

Source: IES H&S survey, 2006

It can be seen that, in contrast to the pattern for tutors, the safe learner group said they had been told about fewer of these issues by their workplace supervisor than did those in the control group. Comparison of these means using analysis of variance indicated that, while this appeared to be a substantial difference between safe learner and control groups, it did not differ significantly (F = 2.21, df 1,190, p = ns). Note also that removing the outlying control sub-group serves to reduce the mean considerably. As would be expected, this difference too is not statistically significant (F = 1.50, df 1, 176, p = n.s.). However, Table 4.15 shows the relative proportions of learners that fell into 'high' 'medium' and 'low' levels of supervisor instruction, and inspection of this distribution lends more credibility to the suggestion that there is a problem with supervisor input for the safe learner group.

Table 4.15: Proportions of each sub-group that reported that their workplace supervisor had told them about a high, medium or low numbers of H&S issues (in per cent)

Number of H&S issues mentioned	Safe learner group	Control group (minus high performing group)	High-performing control sub-group	Total
High	15	27	38	24
Medium	9	5	3	6
Low	76	68	60	70

The analysis of variance on the means was repeated for four of the sites that provided both safe learner and control groups (one site, at which the learners were not employed, was omitted from this analysis). Means across these four sites are shown in Table 4.16.

Table 4.16: Number of items about which learners had received instruction from their workplace supervisor, across the four sites providing learners in both safe learner and control groups and in employment

	Mean	Minimum	Maximum
Safe learner	11.4	0	28
Control	15.5	0	28

Note that in addition to the outlying control sub-group, one group of learners(both SL and C) who were not employed and therefore did not have workplace supervisors, was removed from this analysis

Source: IES H&S survey, 2006

Once again, it can be seen that within this sub-group of the learners, the safe learner participants reported that fewer of the health and safety issues had been mentioned by their supervisor than did learners in the control group. For this comparison the difference approached a reliable level of statistical significance (F = 3.61, df 1,74, p = .061), suggesting, unfortunately, that the safe learner group were less likely to be told about health and safety issues by their workplace supervisors than the other learners.

Told by both supervisor and tutor

To determine whether those in the safe learner group had been more likely to have safety messages reinforced by being told by both their workplace supervisor and their tutor, the total number of times that learners said they had been told by both was calculated. These are shown in Table 4.17.

Table 4.17: Number of items about which learners had received instruction from both their workplace supervisor and their tutor

	Mean	Minimum	Maximum
Safe learner	8.3	0	28
Control	10.1	0	28
Restricted control	9.0	0	28

N (SL) = 84 N (C) = 117 N (RC) = 79. Note that one group of learners (both SL and C), who were not employed and therefore did not have workplace supervisors, was removed from this analysis

Source: IES H&S survey, 2006

Table 4.17 indicates that safe learners as a group were less likely than the control group to have been told by their workplace supervisor about the health and safety issues addressed by the questionnaire than were the controls. However, this difference was not statistically significant ($F = 1.875$, df 1,199, p = ns). This analysis was repeated with the outlying control sub-group removed. As would be expected, there was no significant difference between these means either ($F < 1.0$, p = ns).

Given that the earlier analyses had shown no significant differences in amount of instruction from either tutor or supervisor at the five sites at which there were both safe learner and control groups, this combined analysis was not repeated for this sub-group of participants.

The previous sets of analyses indicate that, overall, the safe learner group was significantly more likely to say that they had received instruction on these topics from their tutors. While they appear less likely to be told about these issues by their workplace supervisors, this finding was not supported statistically. In the next section we consider whether this has any influence on their learning.

Is amount of instruction/reinforcement related to individuals' performance levels?

The main reason for considering the extent to which tutors and supervisors instruct learners about these points is because it may be expected to impact directly on knowledge and, hopefully, thereafter on safety-related behaviours. Since more of those in the safe learner group had said that they had been told about these points than did those in the control group, it might be expected that there would also be a stronger correlation between tutor instruction and score on the test. In this section, therefore, we focus on the relationship between the extent to which learners in the safe learner and

control groups report being told about these issues by their tutor and/or supervisor and their performance on the health and safety test.

Tutor instruction

First, we consider the extent to which tutor instruction impacts on health and safety knowledge. To do this, the total number of items about which the learners said they had been told by their tutors was correlated with their score. For the control and restricted control groups, learners' scores were significantly (albeit only moderately) correlated with the number of items their tutors had talked to them about (see Table 4.18). The amount of variance in learner scores accounted for by tutor instruction was between seven and 16 per cent for the restricted and full control groups respectively.

Contrary to expectations, though, this was not the case for the safe learner group, for whom the very small correlation was negative.

Workplace supervisor

Secondly, the impact of workplace supervisor instruction was assessed[1]. Table 4.18 shows the correlations between score and supervisor instruction. There was no significant correlation between the number of items that learners reported their supervisors mentioning and their score for any of the groups.

Table 4.18: Correlation between scores and instruction for the safe learner group, control group and restricted control group

	N	R	P	Amount of variance accounted for (per cent)
Tutor told learner				
Safe learner group	91	-.098	n.s.	< 1
Control	124	.397	<.001	15.8
Restricted control group	87	.260	.015	6.8
*Supervisor told learner**				
Safe learner group	80	.193	n.s.	3.7
Control	112	.073	n.s	< 1
Restricted control group	70	.112	n.s.	1.3

One group (SL and C) was removed from 'supervisor' correlations as they were not employed

Source: IES H&S survey, 2006

[1] Note that at one site, both safe learner and control group learners were not in employment, and so for these calculations these learners were removed from both the SL and C groups.

Impact of instruction on confidence

To assess the impact of tutor and supervisor instruction on confidence, the mean ratings of confidence were correlated with the number of these points on which learners said they had been instructed by their tutor and supervisor.

Confidence ratings for answers that were correct

Table 4.19 shows, first, that having been told about these issues had a small positive correlation with overall confidence ratings. However, in contrast to the pattern of correlations with the score data, tutors in general had more impact on confidence ratings than did workplace supervisors. In other words, if learners were told about these aspects of health and safety by tutors, it had more impact on learner confidence that their answer was right than if they were told by their supervisor. However, once again, the lowest correlation (.014) was seen for the safe learner group, and the only correlation that was statistically significant was for the full control group. In general, it appears that confidence in relation to answers that are correct is not related to being told about these issues by supervisors.

Table 4.19: Correlation between confidence ratings for answers that were correct and instruction for safe learners and controls

	N	R	P	Amount of variance accounted for (per cent)
Tutor told learner				
Safe learner group	91	.014	n.s.	<.01
Control	124	.292	.001	8.5
Restricted control group	87	.149	n.s	2.2
Supervisor told learner				
Safe learner group	80	.162	n.s	2.6
Control	112	.147	n.s	2.2
Restricted control group	75	.155	n.s	2.4

One group (SL and C) was removed from all 'supervisor' correlations as they were not employed

Source: IES H&S survey, 2006

We suspected that learner ratings of confidence for answers that were incorrect might be inversely related to the extent to which they had been told about health and safety issues by their tutors and supervisors (in other words the more items learners had been told about, the more aware they would be of the items they had not been told about and for which they were, therefore, aware they did not know the answers to). However, the analyses did not bear out this hypothesis. The data in Table 4.19 show a slight inverse relationship between confidence ratings for incorrect answers and tutor instruction for the control and restricted control groups. However, this was not the case for the safe learner group.

Looking at the extent to which workplace supervisors had told learners about health and safety issues and the learners' confidence regarding incorrect items, the data reveal that there was essentially no relationship between these points.

Table 4.20: Correlation between confidence ratings for answers that were incorrect and instruction for safe learners and controls

	N	R	P	Amount of variance accounted for (per cent)
Tutor told learner				
Safe learner group	91	.058	n.s.	< 1.0
Control	124	-.331	<.001	10.9
Restricted control group	87	-.252	.019	6.4
Supervisor told learner				
Safe learner group	80	-.125	n.s	1.6
Control	112	.006	n.s	< 0.01
Restricted control group	75	.018	n.s	<0.01

One group (SL and C) was removed from all 'supervisor' correlations as they were not employed

Source: IES H&S survey, 2006

4.3 Further analyses

4.3.1 Qualification level

Performance was compared across level of qualification (below level 1/level 1, level 2 and level 3) by safe learner and control groups (outlier control group removed). Means for the overall score for the groups are shown in Table 4.21 and **F**igure 4.3. Analysis of variance revealed that a significant amount of the variance in the scores is attributable to qualification level at which the learner is studying ($F = 56.6$, df 2, 181, $p < .001$); once this is accounted for, the impact of the safe learner programme is demonstrated more clearly, with the safe learner groups at each level being higher than those of the comparable control group ($F = 5.04$, df 1, 181, $p = 0.026$). It is noteworthy that the largest increase in mean scores is seen for the lowest level group, an average increase of 2.5 correct answers.

It should be noted that there were too many subject groups represented in the data set, several with very small numbers, to enable a comparison of performance across subjects, and this is the case for all of the following analyses.

Table 4.22 shows the data for the knowledge questions displayed broken down into level and safe learner/control groups.

For this analysis, there was a significant difference for only the level of award ($f = 51.1$, df 2,181, $p < .001$), with those at level 2 and 3 scoring higher on the knowledge questions than those at level 1 or below.

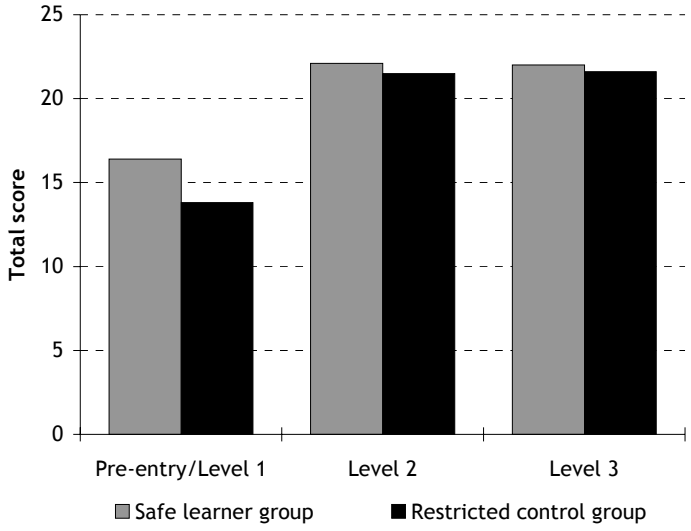
Table 4.21: Mean scores by safe learner and control group and level of qualification

Safe learner or control groups	Level of course	Mean
Safe learner	pre-entry/level 1	16.4
	level 2	22.1
	level 3	22.0
Restricted control group	pre-entry or level 1	13.8
	level 2	21.5
	level 3	21.6

N (SL1) = 16; N (SL2) = 43; N(SL3) = 37; N(C1) = 17; N(C2) = 46; NC(3) = 28

Source: IES H&S survey, 2006

Figure 4.3: Mean scores by safe learner and control group and level of qualification



N (SL1) = 16; N (SL2) = 43; N(SL3) = 37; N(C1) = 17; N(C2) = 46; NC(3) = 28

Source: IES H&S survey, 2006

Table 4.22: Mean knowledge scores by safe learner and control group and level of qualification

Safe learner or control groups	Level of course	Mean
Safe learner	pre-entry/level 1	5.8
	level 2	9.7
	level 3	9.5
Restricted control group	pre-entry or level 1	5.4
	level 2	9.3
	level 3	9.6

N (SL1) = 16; N (SL2) = 43; N(SL3) = 37; N(C1) = 17; N(C2) = 46; NC(3) = 28

Source: IES H&S survey, 2006

Turning next to consider the set of behaviourally-based questions, Table 4.23 and Figure 4.4 show these data displayed by level of qualification and learner group.

Table 4.23: Mean behaviour scores by SL and C group and level of qualification

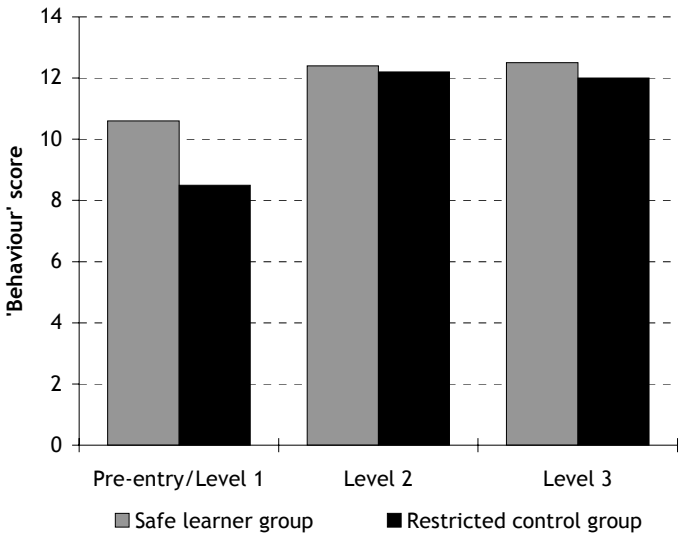
Safe learner or control groups	Level of course	Mean
Safe learner	pre-entry/level 1	10.6
	level 2	12.4
	level 3	12.5
Restricted control group	pre-entry or level 1	8.5
	level 2	12.2
	level 3	12.0

N (SL1) = 16; N (SL2) = 43; N(SL3) = 37; N(C1) = 17; N(C2) = 46; NC(3) = 28

Source: IES H&S survey, 2006

Analysis of variance revealed that there were separate effects for both level of qualification and for learner group. As indicated in the earlier analyses, there was a significant effect of being in the safe learner group, with this group scoring more highly on the behaviour questions than did the restricted control group (f = 10.87, df 1,181, p = .001). In addition, learners at levels 2 and 3 had scored more highly than those in level 1 or below (f = 32.38, df 2,181, p <.001). There was also a significant interaction between the two (f = 9.86, df 2, 181, p = .045).

Figure 4.4: Mean behaviour scores by safe learner and control group and level of qualification



N (SL1) = 16; N (SL2) = 43; N(SL3) = 37; N(C1) = 17; N(C2) = 46; NC(3) = 28

Source: IES H&S survey, 2006

Moving next to consider the impact of qualification level on confidence, Table 4.24 and Figure 4.5 show the average confidence ratings both for those questions for which learner answers were correct and for those that were incorrect. Analyses of variance

indicated that those at level 3 and 4 were more confident about their correct answers than those at level 1 or below ($f = 12.63$, df 2,181, $p < .001$), while for incorrect answers, those at level 1 or below were more confident about their answers than those at level 2 and 3 ($f = 38.8$, df = 2,181, $p < .001$). In addition, while there was no difference in the means for learners at level 2 and 3 in the safe learner and control groups, learners at level 1 or below in the safe learner group were far less confident about incorrect answers than were those in the level 1 and below control group ($f = 8.54$, df 1,281, $p = .001$).

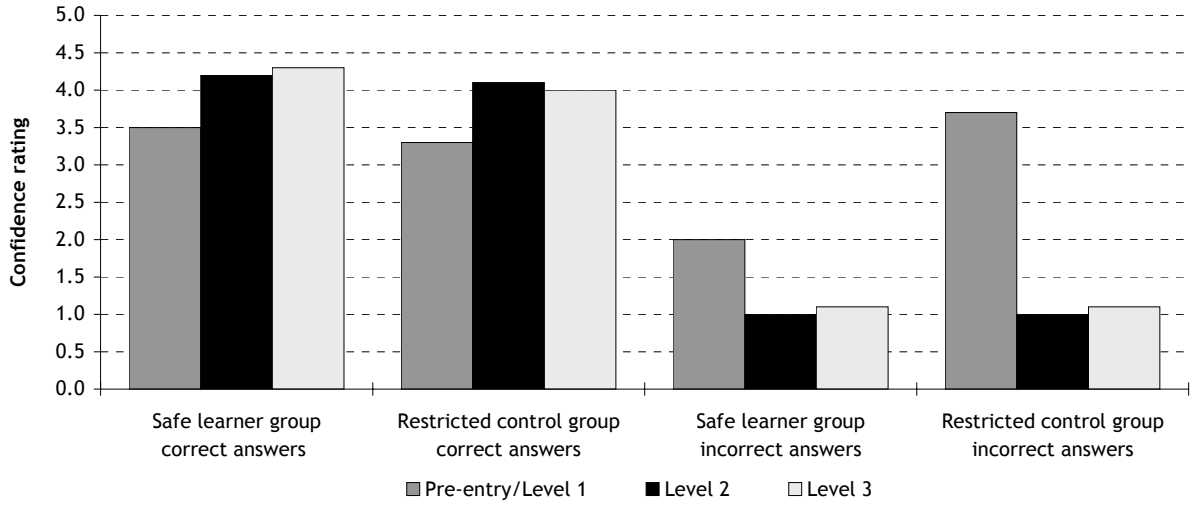
Table 4.24: Mean confidence ratings for correct and incorrect answers, learners group by safe learner and control group and level of qualification

Safe learner or control groups	Level of course	Mean, correct answers	Mean, incorrect answers
Safe learner	pre-entry/level 1	3.5	2.0
	level 2	4.2	1.0
	level 3	4.3	1.1
Restricted control group	pre-entry or level 1	3.3	3.7
	level 2	4.1	1.0
	level 3	4.0	1.1

N (SL1) = 16; N (SL2) = 43; N(SL3) = 37; N(C1) = 17; N(C2) = 46; NC(3) = 28

Source: IES H&S survey, 2006

Figure 4.5: Mean confidence ratings for correct and incorrect answers, learner group by safe learner and control group and level of qualification



N (SL1) = 16; N (SL2) = 43; N(SL3) = 37; N(C1) = 17; N(C2) = 46; NC(3) = 28

Source: IES H&S survey, 2006

Considering next the issue of how many of the topics that learners recalled their tutor telling them about, Table 4.25 shows these data grouped by level and whether in the safe learner or control group.

Table 4.25: Mean number of issues learners recall being told about by their tutor, learners grouped by safe learner and control group and level of qualification

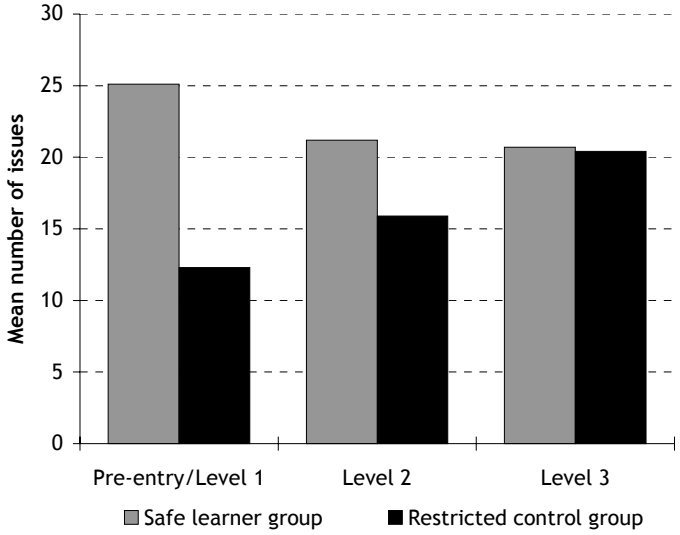
Safe learner or control groups	Level of course	Mean
Safe learner	pre-entry/level 1	25.1
	level 2	21.2
	level 3	20.7
Restricted control group	pre-entry or level 1	12.3
	level 2	15.9
	level 3	20.4

N (SL1) = 15; N (SL2) = 41; N(SL3) = 35; N(C1) = 16; N(C2) = 44; NC(3) = 27

Source: IES H&S survey, 2006

The table shows, firstly, that there is no difference in the number of items that learners at level 3 in the safe learner group recalled and level 3 control group learners recalled. Secondly, there is a large increase in the numbers of issues that the level 2 safe learners recalled compared to learners in the level 2 control group. Thirdly, there is an even larger increase in the number of issues that level 1 and below learners in the safe learner group recall than those in the control group. Analysis of variance indicates that, for this item, while there is no significant effect purely attributable to level, there is a significant impact of the safe learner model on the number of items the learners recall their tutor telling them about ($f = 22.82$, df 1,172, $p < .001$) and a significant interaction between these factors ($f = 6.57$, df 2, 172, $p = .002$).

Figure 4.6: Mean number of issues learners recall being told about by their tutor, learners grouped by safe learner and control group and level of qualification



N (SL1) = 15; N (SL2) = 41; N(SL3) = 35; N(C1) = 16; N(C2) = 44; NC(3) = 27

Source: IES H&S survey, 2006

Finally, in considering the number of these issues that learners recalled their workplace supervisor telling them about, the numbers at level 1 and below available for analysis falls drastically, as learners at one site providing learners at this level were not in employment. This leads to an N of only 4 in each of the level 1 cells. Table 4.26 displays the data; an analysis of variance reveals there to be no significant difference between the remaining cells for this variable.

Table 4.26: Mean number of issues learners recall being told about by their supervisor, learners grouped by safe learner and control group and level of qualification

Safe learner or control groups	Level of course	Mean
Safe learner	pre-entry/level 1	25.1
	level 2	21.2
	level 3	20.7
Restricted control group	pre-entry or level 1	12.3
	level 2	15.9
	level 3	20.4

N (SL1) = 4; N (SL2) = 41; N(SL3) = 35; N(C1) = 4; N(C2) = 44; NC(3) = 27

Source: IES H&S survey, 2006

4.3.2 Test items

Each of the test items were analysed to determine how well it had performed in discriminating between high, medium and low performers. These analyses are shown in full in Appendix 9. Anyone wishing to use the test as a whole, or to select items from it for use in future, shorter, tests, should consider these data (the LSC and the authors are happy for the test to be used by other providers who wish to assess health and safety knowledge).

The extent to which an item performed well overall as a test item can be determined from the first column, 'overall correct'. In general, those items that approximately one-half to two-thirds of learners can usually answer correctly are best for test purposes (since those items that most learners get right or wrong do not discriminate effectively between level of knowledge, but simply identify areas that everyone – or conversely, no-one – knows).

The second factor to consider in selecting items, is the extent to which items discriminate most between high, medium and low performers. The best-performing test items for discriminating between high and low performers are shown in Table 4.27. These may also be helpful to providers in considering areas that need extra attention.

4.3.3 Providers

An analysis of the performance of each group was undertaken to enable the researchers to give confidential feedback to the participating sites (feedback was provided to both

safe learner and control group sites). This information remains confidential to each site. Sites were provided with the mean, maximum and minimum for their group of safe learners (and, where they provided a control group, for this group too), as well as the mean, maximum and minimum for the learners in the other six safe learner sites. They were also given feedback data on how the test items had performed with their group(s). Anonymised site performance profiles are shown in Appendix 5.

Table 4.27: Test items that discriminated best between high and low performers on the health and safety test (in per cent)

Item number and abbreviated topic	Overall correct	High performers correct	Low performers correct
3. how to identify fire extinguishers	82	94	36
4. whose responsibility is H&S	83	95	44
5. Maximum weight individual may lift	72	83	44
7. If find someone who has had electric shock	76	90	44
12. Come into contact with hazardous materials	70	92	44
15. If see someone doing something dangerous	65	79	51
16. What is a hazard	80	98	27
17. How to ensure no repeat of accident	78	95	42
18. What is a risk	80	95	34
20. How frequent should screen breaks be	66	77	38
24. What is a control measure	68	89	33
25. Who can be prosecuted	48	68	11
26. What does COSHH stand for	85	98	53

Source: IES H&S survey 2006

5 Discussion

5.1 Summary of main findings

5.1.1 Performance

Across all the safe learner and control sites there was no significant difference in scores on the test. However, a post-hoc test revealed that one of the control sites had significantly higher scores than all of the other control and safe learner sites. Removal of this group from the analyses revealed that there had been a small, positive effect of the safe learner programme on learners' health and safety knowledge in comparison with the remainder of the control group.

The difference in scores primarily arose through an increase in the safe learners' scores on behavioural items. There was no significant difference between groups on scores for the knowledge-based items.

The largest impact on scores arising from the programme appears to occur within those studying for lower level programmes, pre-entry and level 1. The increase in this group's score was 2.6 points, compared to 0.6 for the learners studying at levels 2 and 3. Entering qualification level into the analysis led to the effect of the safe learner programme being more evident.

Summarising performance in terms of health and safety knowledge, the safe learner model had a moderate impact on learner performance on the test, and the performance impact was mainly seen in the lower-qualified group. However, the model failed to lift those in the safe learner group up to the performance rate that was observed in one of the organisations that had agreed to provide an external control group of learners. Analysis of the distribution of scores revealed that learners from this organisation had a significantly higher performance than all other organisations and groups in the study. This suggests that, while the safe learner model is a useful first step towards improving health and safety provision, in and of itself it is not sufficient to raise standards to an optimal level.

This was an unexpected finding, and we were keen to discover what might differentiate this group of learners from the others. The company involved agreed to waive their right to anonymity, and gave a short interview outlining what they felt to be the strengths of their approach to health and safety. A short description of this company, N G Bailey, is provided in Appendix 10, and we consider their comments at places within the rest of this discussion.

5.1.2 Confidence

Those learners at level 2 and 3 were significantly more confident about their correct answers than were learners at level 1 and below. Learners at level 2 and above also gave lower confidence ratings for their incorrect answers than did learners at level 1 and below. In general, while most of the learners gave lower ratings for incorrect answers than for correct ones, those in the safe learner group gave significantly lower confidence ratings for incorrect answers than did those in the control group. This suggests that the safe learner programme has led them to be more aware of the areas of which they are unsure. Furthermore, there is a particularly interesting difference between the level 1 and below control and safe learner groups. While safe learners at level 1 and below gave ratings of 3.5 for their correct answers and 2.0 for answers that were incorrect, control group learners at level 1 and below appeared not to differentiate between correct and incorrect answers at all: their mean confidence rating for correct answers was 3.3 and their mean confidence rating for incorrect answers was 3.7.

5.1.3 Sources of information

The learners in the safe supervisor groups were significantly more likely to report that their tutors had told them about the various items covered by the health and safety test. Here, again, there was a difference between qualification levels: while there was no difference in the number of these issues that those at level 3 reported their tutors telling them about, at level 2 there was a large difference in the number of the test items the learners recalled their tutor telling them about, some five items on average. For the level 1 and below groups, those in the safe learner group recalled their tutor having told them about twice as many of these issues as did those in the control group.

However, of more concern is the finding that learners in the safe learner group were also less likely to say that their workplace supervisor had told them about these issues, although this difference was not statistically significant.

5.1.4 Drivers of performance

Although learners in the control group (both the full and the restricted control groups) showed some correlation between their recall of the number of the test item topics their tutors had told them about and their overall score (so that those who had been told about more of these subjects tended to have higher scores), this was not the case for the

safe learners. For the safe learners there was no significant correlation between how many of the issues they had been told about and their subsequent performance. Neither was there any correlation between the number of issues that supervisors had told them about and performance on the test.

We now consider some of the possible reasons for this pattern of findings.

5.2 Discussion of results

It emerged that, despite safe learners being significantly more likely to say that their tutors had told them about the various health and safety issues addressed in the questionnaire, there was only a slight improvement to their scores. The explanation that comes first to mind is that the test was inadequate as a test of health and safety knowledge and the small amount of change seen was due to a failure of the test to adequately assess learners' knowledge.

However, set against this is the fact that no real ceiling effect was observed. Analysis of the questionnaire items revealed that several of the questions fell far short of a 100 per cent correct answer rate. Furthermore, inspection of the distribution of learners in the safe learner group and the 'restricted' control group revealed that these learners were distributed across the high, medium and low performance categories in the rough proportions of 40 per cent, 40 per cent and 20 per cent. In contrast to this, the high-performing control group, all from one organisation, firstly had scored significantly better than both the rest of the controls and the safe learner group and, furthermore, had double the proportion of learners who fell in the high performing category, while having only three per cent fall into the lower performing category. It is not just a case of a few very high performing individuals skewing the results – the majority of this high-performing group did well.

This lends credence to the idea that the test was functioning reasonably well as a test of health and safety knowledge. Furthermore, in the safe learner sites, the improvement was largest in those who were registered on lower level programmes and these individuals in general tended to have lower scores than other learners. One possibility then is that the safe learner programme is having some impact on learners, and this is greatest where the providers are working with those who have the most to learn. With learners who already have some knowledge and understanding of health and safety, increasingly more input is needed to achieve smaller gains in safety.

This idea, that increasing amounts of tutor input are needed to raise scores, is supported further by firstly considering learner recall regarding the number of these issues that had been addressed by their tutors. While there were no differences between learners in the safe learner and control groups at level 3, there was a large difference at level 2 and much larger difference at level 1 and below, with the advantage being to the safe learner group. This suggests that, by the time that learners reach level 3, they are largely picking up most of this information via other routes (since although there is only a small

performance difference between learners at this level in the safe learner and control groups, there is a larger difference in the numbers of items the learners in the safe learner and control groups report that their tutors have told them about). This suggests that the safe learner model may be most effective if utilised earlier on in learner programmes, and/or at lower levels. After this, it appears that there needs to be relatively more input in order to achieve further increases in knowledge. This contention is supported by the comparison of our high performing sub-group with the safe learner group. As well as scoring higher on the test, proportionately far more of this group said that their tutors had told them about these issues – 83 per cent said their tutors had told them about 23 or more of the health and safety issues compared with 58 per cent of the safe learners and 33 per cent of the remainder of the control group.

Since completing this work we have ascertained that for a majority of the sites at which there were both safe learner and control groups, the teaching of health and safety was undertaken in the main by the same tutor. While this may explain, to some extent, the only marginal performance difference between the safe learner and control groups, it does not explain why the safe learner groups recalled being told about more of the issues by their tutor. One possibility is that while the tutors delivered similar content to both groups, they reinforced, or repeated, the messages about health and safety more often with the safe learner group. Alternatively, there may be some other aspect of the Safe Learner programme (either the way in which the information was structured, or supporting documentation that was given to the safe learner group) that made it more likely that learners would attend to, and remember being told about, this information. The research did not investigate the approach taking to teaching health and safety in the various participating organisations; clearly it would be useful to have more information on teaching methods before making any recommendations for change to practice in future. Further research to investigate teaching methods used in the context of the Safe Learner pilot would therefore be useful.

A further consideration is the influence of workplace supervisors. We started with the assumption that a workplace supervisor is a powerful influence on learners. This was not supported by the correlations between supervisor input and scores, which finding tends to argue against this notion. Set against this, however, were the data that revealed far less input on these points for the safe learner group from their supervisors, not just in comparison with the high-performing control group but also the remainder of the control group.

It is possible that this is a fluke finding, and it would be helpful to follow up this point to discover whether this really is just a coincidence. One possibility is that, knowing that the learners were enrolled on the safe learner programme, the employers felt that all health and safety responsibilities had been discharged and it was therefore less necessary for them to cover health and safety issues. While this is contrary to what they should have understood from the nature of the programme, this might be one unintended consequence that the LSC and its partner in this project ENTO might seek to investigate further. The influence of the supervisor on learners was emphasised by our high-

performing organisation. Amongst the aspects of their provision that they believe contribute to their good health and safety performance is training for all supervisors in health and safety.

5.3 Conclusions

At present, then, the safe learner pilot can be said to have had a slight impact on learners' health and safety knowledge. However, where the programme had most impact was on the behavioural items in the questionnaire, which may be considered to be the most important from the point of view of preserving the health and safety of learners. Although this is no guarantee that the learners will actually behave in a safe way, but it at least indicates that they know in principle what they should do in these potentially dangerous situations.

Improvement was greatest in those registered on the lower level programmes, who also tended to be the lowest scoring groups. Safe learners were more likely to say that their tutors had told them about the issues addressed in the questionnaire than the restricted control group, but nonetheless were less likely to do so than those in the high-performing control group.

Comparison with the high performing group indicated that further increases in learners' health and safety knowledge *are* feasible. However, there appear to be limits to what can be achieved through implementation of the safe learner model alone. While the research did not allow us to investigate the actions of the high performing group to determine what has made their approach so effective, the company did consent to be interviewed and their views are reported in the appendices (Appendix 10). There is one way in which this group differs from the others, and that is the fact that they are an employer of apprentices as well as a training provider. However, this makes them well-placed to comment on the various factors involved in ensuring safe systems, and the training co-ordinator's comments, backed up by the performance data and other results from this particular group, suggest that more input, both from tutors and from *adequately trained workplace supervisors,* are needed in order to increase learners' knowledge scores above those that were obtained using the safe learner model.

Further research would be needed to substantiate these suggestions, and it would be useful to approach a range of organisations with exemplary health and safety records to discover what characterises their provision. Greater understanding of the role of the workplace supervisor will also be valuable.

Appendix 1: Safe Learner Model

The Safe Learner Concept – Extract from the Consultation Paper, November 2004, LSC, paragraphs 47-87

47. The safe learner framework has proposed within in it a model which uses five stages of health and safety as part of the process of passing information, instruction and training to learners and young people and building their capabilities and competencies. This is explained in more detail below.

Five stages of the safe learning model for learners and employees

48. The safe learning model is one part of the safe learner framework. It has five stages, although not all will apply to all learners. The fifth stage (lifelong health and safety) highlights the fact that health and safety competence needs to be maintained throughout a person's working life and as circumstances, environments, work and risks change. The stages are:

    - Stage 1: pre-work experience briefing
    - Stage 2: workplace induction
    - Stage 3: progression and foundation
    - Stage 4: the safe learner and worker
    - Stage 5: lifelong health and safety learning.

49. The stages are set out below with a summary of the outcomes for each stage, some notes on delivery and the most likely target. It is recognised that learning is a continuous process and each stage will overlap and merge with those that precede and follow it. However, the stages do provide:

    - a simple structure

- the opportunity to plan, assess and review
- a tool to measure and provide performance indicators.

Stage 1: Pre-work experience briefing

50. Stage 1 is normally provided in schools before work experience takes place, or by colleges or providers to learners about to undertake any work experience or work-based learning.

51. The objective is to raise awareness and give learners a general understanding of occupational health and safety. It is theory based. Learners should have a general awareness and understanding at the end of any briefing(s) and before any work experience of:

- what occupational health and safety is and why it is important
- what the benefits of occupational health and safety are
- hazard and risk, what each is and examples of each
- the general obligations of learners and employees and the limitations at work
- accidents, ill-health and first aid
- knowledge of what causes most harm to employees at work and the need for first aid
- types of emergencies that can happen at work, including fire and the general control measures used in emergencies (alarms, fire-fighting, means of escape and so on)
- the general duties employers have towards learners and employees, including supervision, information, instruction and training, and prohibitions or restrictions for young people
- safety signs and notices, what the main ones are and what they warn of
- the need for personal protective equipment and clothing as a last resort
- safe systems of work, what they are and the background to control measures that result from risk assessment
- an awareness of key common safety and health hazards, risk and controls (for example, manual handling, slips, trips and falls, machinery and equipment, falls from height, transport, hazardous substances, and electricity).

Stage 2: Workplace induction

52. The workplace induction should cover theoretical and practical health and safety. It should be given to all new learners and employees when they start a learning programme. The information should be repeated as appropriate when the learners are with employers and/or when there are significant changes such as changes in location or job.

53. The induction stage reflects the legal requirement under the Management of Health and Safety at Work Regulations 1999 (HMSO, 1999) in relation to providing information, instruction and training on recruiting new employees.

54. Employers must provide induction in the workplace, but it is also relevant for learners when they are with a provider or college. Similar (if not the same) learning outcomes will be required.

55. By the end of their first day of their learning programme (or shortly after in certain circumstances), each learner should understand:

- emergency arrangements (fire, accidents and first aid)
- any significant risks that may affect them (for example, machinery and equipment, manual handling, hazardous substances, slips, trips and falls)
- control measures for the above (for example, safe systems of work, supervision, protective and preventive measures, training and instruction, signs and notices)
- supervision arrangements (and who is responsible for them) and the contact person (if not the supervisor or instructor) for any health and safety concerns
- any restrictions or prohibitions that apply to the learner (for example, equipment, processes, areas, systems)
- any personal protective equipment or clothing that they must wear, why this is so, and when and how they should wear it
- welfare arrangements (for example, drinking, eating, toilets, washing, hours of learning and work)
- the safety policy, or those relevant and appropriate parts that affect the learner
- employer and employee rules ('dos' and 'don'ts') as appropriate.

56. Learners need to be shown around the workplace premises or at least the relevant areas for them. Health and safety matters that relate to the above items should be pointed out to them, if they are new to the location.

57. For learners who are already in employment at the workplace, before they start their programme, the provider will need to make sure that the learners understand

the above matters. If learners do not understand, providers need to address this as part of any action or development agreed with the employer.

58. Items 2 and 3 in paragraph 55 will in particular need to continue as the learner progresses and does more. Before they attempt a new task or area of work that has not been covered at induction, the learner will need to receive appropriate information, instruction and/or training so that they understand hazard, risk and risk control in the new situation. This work will be ongoing.

59. For learners who are already in employment, the provider will need to assess their understanding of health and safety in order to identify exactly what they already know and to plan their training and the health and safety element that goes with it.

60. For internal induction, it is good practice for learners to be provided with an entitlement statement.

Stage 3: Progression and foundation

61. For Stage 3, and over time, organizations need to develop learners' understanding beyond the Stage 2 induction. This further learning will relate to learners who are based with an employer. The indicators, which are divided into two parts, are to be used with learners after six weeks or so in the workplace. Remember that the indicators need to reflect the learner's ability to learn and the degree of risk. This stage contributes significantly to the learner's achievement of the health and safety element of their qualification or learning outcomes.

Part 1: Understanding and awareness

62. The following paragraphs 63 to 76 explain what the learner should understand in the various areas of health and safety in the workplace.

63. The **general** principles are:

    a. what health and safety is

    b. the concept of hazard and risk and examples of each in relation to work

    c. that certain occupations have greater risks than others and particular occupations have particular risks

    d. what actually harms employees at work and why

    e. what risk assessment is

    f. what the benefits of good health and safety are.

64. For accidents:

    a. what an accident is

b. the most common accidents that happen at work

c. the factors that contribute to accidents

d. the consequences of accidents

e. how accidents can be prevented

f. what to do if they have an accident (reporting procedures and so on).

65. For first aid:

a. what first aid is

b. what first-aid arrangements employers have to make

c. the role of first aiders and appointed persons

d. what first-aid materials and facilities need to be provided in the workplace.

66. For fire:

a. the causes of fire at work

b. the risks associated with fire

c. what fire precautions are necessary

d. the need for detection, plans, routes, exits, assembly points and so on

e. the various methods of fighting fire.

67. For manual handling:

a. what manual handling is

b. the common types and causes of manual handling injuries

c. how manual handling risks can be reduced

d. basic manual handling techniques.

68. For electricity:

a. how electricity can cause harm

b. the common hazards associated with electricity

c. the precautions necessary to prevent and reduce risk

d. what to do in the case of electric shock.

69. For equipment and machinery:

a. the main hazards associated with using equipment or machinery

b. the main controls that are used to protect people from harm

c. the type and purpose of guards

d. the prohibition of dangerous machinery

e. the training and methods of work necessary to operate machinery and equipment safely.

70. For slips, trips and falls:

a. the main hazards and risks associated with slips, trips and falls

b. the factors that contribute to slips, trips and falls in the workplace

c. the methods and controls to reduce the risk of slips, trips and falls.

71. For working at height:

a. the hazards and risks associated with working at height

b. examples of common tasks which give rise to working at height

c. the factors that contribute to persons falling from height and objects falling from height

d. the methods and controls to reduce the risk of falls from height (including while using ladders).

72. For transport and vehicles:

a. the hazards and risks associated with working with and around vehicles

b. examples of common accidents associated with vehicles and transport

c. the factors that contribute to transport and vehicle accidents

d. the methods and controls to reduce the risk of accidents involving vehicles and transport.

73. For personal health and welfare:

a. the main effects of stress, and examples of how it can be reduced

b. alcohol and drugs at work and how risks can be minimized

c. policies on smoking

d. the risks associated with violence, harassment and bullying and control measures to reduce the risk

e. the risk and controls in relation to working time and pregnancy.

74. For occupational health:

    a. what occupational health and ill-health are

    b. examples of ill-health associated with work

    c. the main classification and marking of hazardous substances

    d. the various methods of control

    e. the effects of excessive noise and vibration and how they are controlled

    f. what ergonomics is.

75. For workplaces:

    a. what employers have to provide

    b. what makes a safe and healthy workplace

    c. what makes an unsafe and unhealthy workplace

    d. how trainees can contribute to workplace health and safety

    e. what notices, signs and labels should be in workplaces.

76. For legal matters:

    a. employees' obligations under the *Health and Safety at Work Act 1974* and Management of Health and Safety at Work Regulations 1999 (and other health and safety legislation – see www.hse.gov.uk)

    b. employers' legal obligations under the *Health and Safety at Work Act 1974* and Management of Health and Safety at Work Regulations 1999 (and other health and safety legislation – see www.hse.gov.uk)

    c. the legal obligations that are placed on the self-employed, suppliers and manufacturers and what those general obligations are

    d. how enforcement of health and safety legislation works, including the role and powers of inspectors, enforcement action and the penalties for breaking health and safety legislation

    e. the requirement to consult employees and the role of safety representatives and safety committees.

Part 2: Practical understanding and application in the workplace

77. The learner has to demonstrate a practical application of the above to his or her workplace and role, job and tasks. In particular, the learner needs to understand:

    a. the significant risks in relation to his or her workplace and his or her work tasks

b. any working practices in his or her job role that can harm him- or herself or others

c. the necessity of reporting any differences between current working practices and agreed procedures, and particularly of reporting promptly any immediate hazard(s)

d. the control measures for a) above, which link to b) and c)

e. the arrangements for fire protection

f. the arrangements for reporting accidents or health problems

g. the arrangements for first aid

h. the supervision arrangements

i. whether there are any prohibited or restricted processes, areas, machinery and so on, and what these are

j. where the safety policy is kept and the parts that are important and relevant to him or her

k. who the key person is for health and safety matters

l. the workplace rules ('dos' and 'don'ts') for health and safety

m. how health and safety is communicated in the workplace (signs, notices, the safety committee, training and instruction and so on) and the necessity of reporting any noticeable failings

n. the arrangements to protect others (the public, contractors, visitors and so on)

o. what welfare facilities are provided

p. what personal protective equipment and clothing is required, what it is used for and when it needs to be used or worn

q. how to report health and safety training needs to the appropriate person(s)

r. that the legal requirements and workplace rules and procedures are followed in practice

s. that health and safety hazards within the learner's capability must be rectified

t. the importance of ensuring that personal conduct in the workplace does not endanger the health and safety of the learner or other people.

Stage 4: The safe learner and worker

78. It is recommended that providers and employers use the existing health and safety competence standard for people at work that is endorsed by the HSE, ENTO and

the Institute of Occupational Safety and Health (IOSH) as the benchmark for Stage 4.

A summary is reproduced below.

ENTO Approved Standards: Health and Safety for People at Work

79. Unit A 'Ensure your own actions reduce risks to health and safety' has been designed for all employees at work. It does not require an individual to undertake a full risk assessment. Rather, it is about having an appreciation of the significant risks in the workplace and knowing how to identify them and deal with them.

80. Unit A has two elements:

- A1 Identify hazards and evaluate risks in the workplace
- A2 Reduce risks to health and safety in the workplace.

81. These two elements cover the health and safety duties for everyone in the workplace. Unit A also describes the competencies required to ensure that:

- the actions of individuals do not create any health and safety risks
- individuals do not ignore significant risks in the workplace
- individuals act to put things right, including reporting situations that pose a danger to people in the workplace and seeking advice.

82. For Element A1, individuals need to show an understanding of health and safety requirements and policies in the workplace. They also need to check their own working practices and work area for any risks to themselves or others. Individuals should be able to identify the risk arising from any hazards identified and know which they can deal with safely and which must be reported to the 'responsible person'.

83. Element A2 requires individuals to show that they have taken steps to reduce those risks to health and safety that they might encounter at work. It covers carrying out tasks safely and in accordance with instructions and workplace requirements.

84. The structure and format of Unit A is:

- essential knowledge and understanding
- performance criteria
- range statements
- specific knowledge
- evidence requirements.

85. Full details of Unit A are in the ENTO *Health and Safety Standalone Units* (ENTO, 2002).

Stage 5: Lifelong health and safety learning

86. Stage 5, which is the final stage, continues throughout a person's working life, and recognizes that health and safety training, information and instruction needs to be repeated periodically. An individual's competence in health and safety needs to be maintained and improved as circumstances change. This includes not just the changing work or environment, but as the person changes and particularly as they get older.

87. No specific objectives are set for Stage 5, although consideration may be given to achievement of ENTO Unit G 'Risk Assessment' and, for those who wish to progress in health and safety itself, 'Occupational Health and Safety Practice', a National Vocational Qualification at level 3 and level 4.

Appendix 2: Final Questionnaire

HEALTH AND SAFETY QUESTIONNAIRE

Confidential to the Institute for Employment Studies

Thank you for agreeing to fill out this questionnaire.

There is no intention to identify you or to tell anyone what your score on the questionnaire is. Only the researchers will know this, and we are only interested in finding out how your group as a whole did, not individuals.

Please fill in the following details about yourself and your background:

Your age: ..... years Are you: male ☐ female ☐

Course details (*to be typed in by IES prior to distribution to centres*)

When you usually attend classes for your training, are they usually at:

a college ☐ a training organisation ☐ your employers ☐ other ..... (please describe)

In the college or training centre, when you started your training, were you told by your tutor about:

Emergency arrangements? yes ☐ no ☐

Significant hazards? yes ☐ no ☐

The important safe working practices for your area of work? yes ☐ no ☐

Who you should contact over health and safety problems? yes ☐ no ☐

At your place of work or work placement:

Were you told anything about health and safety before starting work? yes ☐ no ☐

Does your supervisor talk to you about safe working practices? yes ☐ no ☐

Have you ever been left unsupervised while at work? yes ☐ no ☐

Questions about health and safety

In the following questions, please **tick** the answer you think is correct, then **circle** a number to show how confident you feel that this is the right answer using the following scale:

1 = I don't really know if this is right answer or not

2 = I am not very sure but think this is most likely the right answer

3 = I think it probably is the right answer

4 = I am almost certain it's the right answer

5 = I am absolutely certain this is the right answer

If you need a reminder, the scale numbers and meanings are given at the bottom of each page.
After this, if you can remember, please indicate if you were told this by your trainer/tutor or by your employer (tick both boxes if you have been told this both at your place of training and by your employer). Take a look at this example below before you start. The example shows someone who has ticked answer c (which is the right answer), said that they are almost certain it's the right answer, and they have been told this by **both** their supervisor and by the tutor at their college/training centre.

Example:

		Tick the right answer here	How confident are you that this is the right answer?					Have you been told this by your: supervisor/manager	tutor
	The piece of equipment you are about to use has a faulty on/off switch. What should you do?								
a)	Alert a colleague before you start work, just in case you have any problems with it	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Look for another one and use that instead	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Stop work and tell your supervisor	☑	1	2	3	(4)	5	(supervisor/manager)	(tutor)
d)	Tape the switch and carry on working	☐	1	2	3	4	5	supervisor/manager	tutor

Now please work through the 28 questions below ticking what you believe is the right answer for each one. Then indicate how confident you are that it is the right answer using the 1 – 5 scale. You can circle any number and the meanings of the numbers are given at the bottom of each page in case you need a reminder of which way the scale runs. The circle whether you were told about this by your supervisor/manager or by your tutor or both.

1 = I don't really know if this is right answer or not
2 = I am not very sure but think this is most likely the right answer
3 = I think it probably is the right answer
4 = I'm almost certain it's the right answer
5 = I am absolutely certain this is the right answer

Circle **5** if you are absolutely certain your answer is right, or **1** if you don't really know if it is right

		Tick the right answer here	How confident are you that this is the right answer?					Have you been told this by your: supervisor/manager	tutor
1.	**What should you do if you discover something that could cause an accident at work?**								
a)	Ask your colleagues if they think it is a problem	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Alert your colleagues then tell your supervisor	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Tell your colleagues to watch out for this potential hazard	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Put it in the accident book so there is an official record of it	☐	1	2	3	4	5	supervisor/manager	tutor
2.	**What should you do if the fire alarm sounds?**								
a)	Assume it is a test unless you see other people leaving, then leave by quickest route out of the building	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Go and find your supervisor and check that this is a real fire alarm and if it is leave the building immediately by the route indicated by the green running man signs	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Make equipment safe then leave the building immediately by the route indicated by the green running man signs	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Wait for the designated fire warden to tell you it is a real fire alarm and then get your coat and any personal possessions and get out of the building	☐	1	2	3	4	5	supervisor/manager	tutor

		Tick the right answer here	How confident are you that this is the right answer?					Have you been told this by your:	
								supervisor/manager	tutor
3.	**All new fire extinguishers are coloured red. How do you identify the different types?**								
a)	Ask a colleague	☐	1	2	3	4	5	supervisor/manager	tutor
b)	By the colour panel or band on the body of the extinguisher	☐	1	2	3	4	5	supervisor/manager	tutor
c)	It is written on a sign next to it on the wall	☐	1	2	3	4	5	supervisor/manager	tutor
d)	By the size, shape and weight of the extinguisher	☐	1	2	3	4	5	supervisor/manager	tutor
4.	**Whose responsibility is health and safety at work?**								
a)	The employer's	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Everyone's	☐	1	2	3	4	5	supervisor/manager	tutor
c)	The main contractor's, if you are working for a client	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Visitors'	☐	1	2	3	4	5	supervisor/manager	tutor
5.	**What is the maximum weight that an individual may lift?**								
a)	The weight you can lift comfortably	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Whatever the supervisor tells you	☐	1	2	3	4	5	supervisor/manager	tutor
c)	35 Kg	☐	1	2	3	4	5	supervisor/manager	tutor
d)	15 Kg	☐	1	2	3	4	5	supervisor/manager	tutor
6.	**How would you recognise a hazardous substance?**								
a)	By its smell	☐	1	2	3	4	5	supervisor/manager	tutor
b)	It will be in a suitable container	☐	1	2	3	4	5	supervisor/manager	tutor
c)	The container will be a particular colour	☐	1	2	3	4	5	supervisor/manager	tutor
d)	By a symbol on the container	☐	1	2	3	4	5	supervisor/manager	tutor

		Tick the right answer here	How confident are you that this is the right answer?					Have you been told this by your: supervisor/manager	tutor
7.	**A person has received an electric shock and is still in contact with the live circuit. What should you do?**								
a)	Run and get help (or phone for help) immediately	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Call a colleague and tell them to stay with the person while you fetch, call or phone for help	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Start calling for help immediately, switch off the electricity yourself, if possible, and then fetch, call or phone for help if it hasn't already arrived	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Set off the fire alarm to call for help	☐	1	2	3	4	5	supervisor/manager	tutor
8.	**How should you stack items you don't need for a while?**								
a)	Stack them where they can be easily seen	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Stack them on a shelf out of the way	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Stack them somewhere where you can reach them easily and they are not liable to fall	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Stack them somewhere near where you are working	☐	1	2	3	4	5	supervisor/manager	tutor
9.	**Why is it important to report 'near miss incidents'**								
a)	So there is a record of it and colleagues will know to be extra careful in these situations	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Because it is required of employers that they report all accidents and 'near misses' to the Health and Safety Executive	☐	1	2	3	4	5	supervisor/manager	tutor
c)	So that lessons can be learnt and actions taken to stop it happening again	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Because the trade union needs to be kept informed of any unsafe practices at work	☐	1	2	3	4	5	supervisor/manager	tutor

		Tick the right answer here	How confident are you that this is the right answer?					Have you been told this by your: supervisor/manager	tutor
10.	**What should you do if you are asked to operate a piece of equipment that does not have a guard or emergency stop?**								
a)	Make sure you work very carefully, following all safety precautions	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Refuse to use the equipment until it is fitted with a guard or safety stop	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Make sure there is someone else around to check on you and tell them what the problem is before using the equipment	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Report the problem before you start work on the equipment	☐	1	2	3	4	5	supervisor/manager	tutor
11.	**If you are in work and you find someone lying on the floor who has just had an accident, what should you do?**								
a)	Help them get up	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Ask them if they want you to report the accident to the health and safety officer	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Go and fetch (or phone) one of the named first aiders, your supervisor or manager immediately	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Take a photo on your mobile phone in case they want some evidence for a claim	☐	1	2	3	4	5	supervisor/manager	tutor
12.	**If your job means that you keep coming into contact with hazardous materials what should you do?**								
a)	Ask for any personal protective equipment you feel is appropriate to the hazard *eg* gloves, safety glasses, face mask	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Check your exposure to the hazardous material is below the accepted levels	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Get checked out by the company health and safety officer every six months	☐	1	2	3	4	5	supervisor/manager	tutor
d)	You should not come into direct contact with hazardous materials – your employer should carry out a risk assessment and implement a safe system of work that prevents contact (this might include issuing personal protective equipment)	☐	1	2	3	4	5	supervisor/manager	tutor

		Tick the right answer here	How confident are you that this is the right answer?					Have you been told this by your: supervisor/manager	tutor
13.	**If your supervisor asks you to do something you have not been trained to do what should you do?**								
a)	Read the instruction manual and check with colleagues before starting	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Tell your colleagues you have not been trained and ask them to show you the best way to do the job	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Tell your supervisor you have not been trained and ask for training before you proceed with the work	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Get in touch with your trainer and ask if it's safe to proceed with the work before you have had proper training	☐	1	2	3	4	5	supervisor/manager	tutor
14.	**You need to put some heavy files into a four-drawer filing cabinet. Which is the best drawer to put them in?**								
a)	Top	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Next to top	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Next to bottom	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Bottom	☐	1	2	3	4	5	supervisor/manager	tutor
15.	**What should you do if you discover a colleague doing something that could endanger them or others in the workplace?**								
a)	Ask the individual to stop doing it and tell your supervisor because, even if they stop, this still constitutes a 'near miss'	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Tell them that what they are doing is dangerous	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Ask a more senior colleague to talk to them about it and ask them to stop	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Talk to the trade union health and safety representative about your concerns	☐	1	2	3	4	5	supervisor/manager	tutor

		Tick the right answer here	How confident are you that this is the right answer?					Have you been told this by your: supervisor/manager	tutor
16.	**What constitutes a hazard in the workplace?**								
a)	Obstructions (such as boxes put where you are likely to trip over them)	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Anything that requires health and safety training before you can use it	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Anything with the potential to cause harm, damage or loss to the person	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Anything that the Health and Safety Executive would inspect if they visited your workplace	☐	1	2	3	4	5	supervisor/manager	tutor
17.	**After an accident has happened, the best way to make sure the same thing doesn't happen again is:**								
a)	Give the person involved some special training	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Fix all the obvious causes of the accident	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Tell everyone who works in that area to be more careful in future	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Investigate the accident to make sure the causes of the accident are fully understood and then deal with them	☐	1	2	3	4	5	supervisor/manager	tutor
18.	**What does the term 'risk' mean?**								
a)	The damage caused by an accident	☐	1	2	3	4	5	supervisor/manager	tutor
b)	The likelihood of harm being caused	☐	1	2	3	4	5	supervisor/manager	tutor
c)	The damage caused by taking chances	☐	1	2	3	4	5	supervisor/manager	tutor
d)	The result of harm being caused	☐	1	2	3	4	5	supervisor/manager	tutor

		Tick the right answer here	How confident are you that this is the right answer?					Have you been told this by your: supervisor/manager	tutor
19.	**If you need to get heavy items down from shelves or racking that are higher than you can reach, would you:**								
a)	Stand on a chair	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Use a stepladder	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Use a stepladder and pass the items down to a colleague	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Stand on the shelves/racking	☐	1	2	3	4	5	supervisor/manager	tutor
20.	**When you are using a computer, how often should you take a 'screen break' (a short break from using the keyboard)?**								
a)	As frequently as your employer tells you, but at least once a morning and once an afternoon, unless you are busy	☐	1	2	3	4	5	supervisor/manager	tutor
b)	No specific frequency, but ideally around every 45 minutes	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Every two hours	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Every four hours	☐	1	2	3	4	5	supervisor/manager	tutor
21.	**Why should there be regular inspections of the workplace?**								
a)	To prepare for visits from an enforcement officer	☐	1	2	3	4	5	supervisor/manager	tutor
b)	To keep written safety records up to date	☐	1	2	3	4	5	supervisor/manager	tutor
c)	To make sure everyone is doing their job properly	☐	1	2	3	4	5	supervisor/manager	tutor
d)	To check whether the working environment is safe	☐	1	2	3	4	5	supervisor/manager	tutor

		Tick the right answer here	How confident are you that this is the right answer?					Have you been told this by your: supervisor/manager	tutor
22.	**What is the over-riding piece of health and safety legislation that applies to all workers and employers in England?**								
a)	Health and Safety Disciplinary Code 1995	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Health and Safety of Workers Act 1993	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Health and Safety at Work Act 1974	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Health and Safety in Factories, Shops and Industrial Premises Act 1982	☐	1	2	3	4	5	supervisor/manager	tutor
23.	**What does the term MEL stand for?**								
a)	Minimum exposure limit	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Maximum exposure length	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Maximum exposure limit	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Minimum environmental limit	☐	1	2	3	4	5	supervisor/manager	tutor
24.	**What statement best describes a control measure?**								
a)	A list of risks involved in a particular job	☐	1	2	3	4	5	supervisor/manager	tutor
b)	A procedure to remove or reduce risks	☐	1	2	3	4	5	supervisor/manager	tutor
c)	A list of the hazards involved in a particular job	☐	1	2	3	4	5	supervisor/manager	tutor
d)	A procedure for the use of a piece of equipment	☐	1	2	3	4	5	supervisor/manager	tutor

		Tick the right answer here	How confident are you that this is the right answer?					Have you been told this by your: supervisor/manager	tutor
25.	**Who can be prosecuted for a breach of Health & Safety Law?**								
a)	The company	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Company Health and Safety managers	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Line managers	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Any employee	☐	1	2	3	4	5	supervisor/manager	tutor
26.	**What do the initials COSHH stand for?**								
a)	Control of Safety, Hazards and Hygiene	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Control of Substances, Hygiene and Hazards	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Control of Substances Hazardous to Health	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Control of Systems, Hazards and Health	☐	1	2	3	4	5	supervisor/manager	tutor
27.	**What colour should a First Aid box be?**								
a)	Red	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Blue	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Green	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Black	☐	1	2	3	4	5	supervisor/manager	tutor

		Tick the right answer here	How confident are you that this is the right answer?					Have you been told this by your: supervisor/manager	tutor
28.	**At what age is a person classified as a 'young person' under safety legislation?**								
a)	Under the age of 16	☐	1	2	3	4	5	supervisor/manager	tutor
b)	Under the age of 18	☐	1	2	3	4	5	supervisor/manager	tutor
c)	Under the age of 21	☐	1	2	3	4	5	supervisor/manager	tutor
d)	Under the age of 26	☐	1	2	3	4	5	supervisor/manager	tutor

Appendix 3: Participant Profile

Age and gender

Sex	Male					Female				
Age	**16-17**	**18-19**	**20-23**	**34-30**	**31+**	**16-17**	**18-19**	**20-23**	**24-30**	**31+**
Safe learner	37	27	11	2	4	3	5	1	-	2
Control	36	42	23	6	6	2	4	4	1	5

Subject and level

	Electro-technical	Engineering		Carpentry		Plumbing	Painting & decorating	Admin	Glazing		CAD	Fab & welding	Construction		
	L3	L2	L3	L2	L3	L3	L2	L2	L2	L3	L3	L2	L1	L2	L3
Safe learner	15	12		6	3	1	3	11	2	1	15		4	4	
Control	38	1	3	3	7	4	5	14			12	2	5		2

	Joinery	Plastering	Making an impression	Kitchen ent. & food prep		Personal safety	Volunteer skills	Hospitality		Furniture installation	
	L2	L2	L1	L1	L2	L1	L1	L2	L3	L2	L3
Safe learner	2	1			1	8	4		1	1	1
Control	5		8	4				2		2	

Appendix 4: Control Group Sign-up Form

Sign-up form to take part in short test for £10 reward in January

Training provider/employer name (IES to insert for each provider/employer)

Training provider address (IES to insert)

I understand that in January the Institute for Employment Studies will be carrying out a survey of learners' knowledge of health and safety issues at work. This will consist of a short multiple-choice questionnaire which will take no longer than half an hour to complete and for which those who take part will receive a £10 gift voucher of their choice. I confirm that I have agreed to take part in the survey and give my consent for the Institute for Employment Studies to contact me in January.

Your name	Signature	e-mail address (if you have one)	Telephone number	Your preferred gift voucher (HMV, Boots, W H Smith).

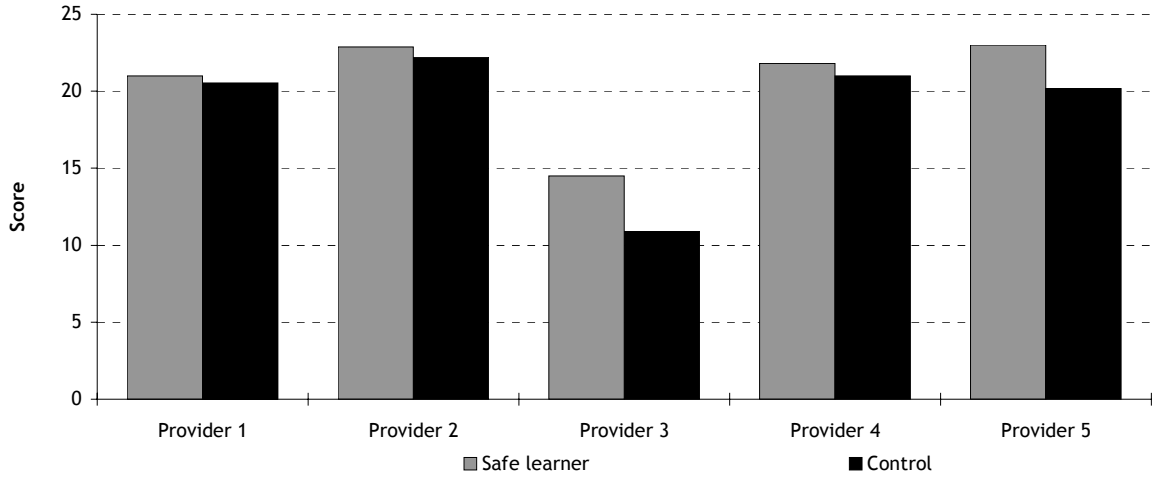
Appendix 5: Institutional Performance Profiles

Table A5.1: Institutional performance profiles

	Overall score	Mean score for knowledge items	Mean score for behaviour items	Mean confidence rating for correct answers	Mean number of items tutor told them about	Mean number of items supervisor told them about
Safe learner sites						
SL site 1	22.4	10.3	12.1	4.0	21.7	11.7
SL site 2	21.8	9.5	12.3	4.4	22.5	13.9
SL site 3	21.8	9.1	12.8	4.1	24.5	4.4
Combined safe learner and control sites						
SL&C site 1 – SL group	14.5	4.5	10.0	3.3	25.0	N/A
SL&C site 1 - Control	10.9	3.8	7.2	2.9	9.2	N/A
SL&C site 2 – SL group	21.1	9.0	12.2	4.1	21.7	10.3
SL&C site 2 – Control group	21.3	9.23	12.1	4.1	19.0	12.4
SL&C site 3 – SL group	21.8	9.6	12.2	4.2	24.2	4.40
SL&C site 3 – Control group	21.0	9.2	11.8	4.5	21.5	8.5
SL&C site 4 – SL group	23.0	10.2	12.8	4.1	14.7	17.8

	Overall score	Mean score for knowledge items	Mean score for behaviour items	Mean confidence rating for correct answers	Mean number of items tutor told them about	Mean number of items supervisor told them about
SL&C site 4 – Control group	20.2	8.5	11.7	3.9	18.6	18.2
SL&C site 5 – SL group	22.9	10.0	12.9	4.4	20.4	17.1
SL&C site 5 – Control group	22.2	9.8	12.4	4.3	24.2	21.1
Control sites						
Control site 1	22.7	10.1	12.9	4.2	13.7	20.1
Control site 2	24.2	10.6	13.6	4.5	24.5	13.5
Control site 3	21.4	9.2	12.2	3.9	14.3	8.4

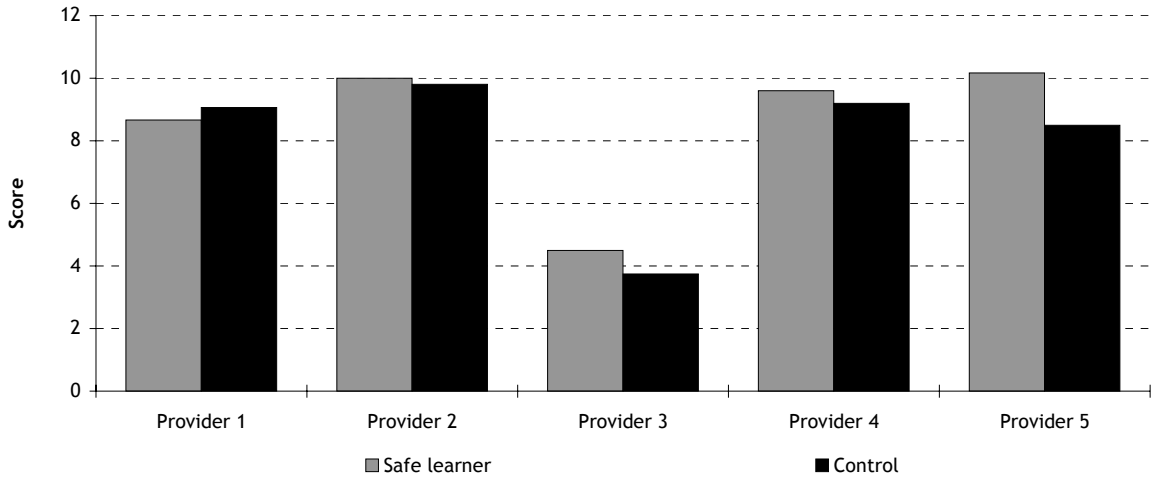
Figure A5.1: Total number of correct answers at sites supplying both safe learner and control groups



N (SL) = 53; N (C) =53

Source: IES H&S survey, 2006

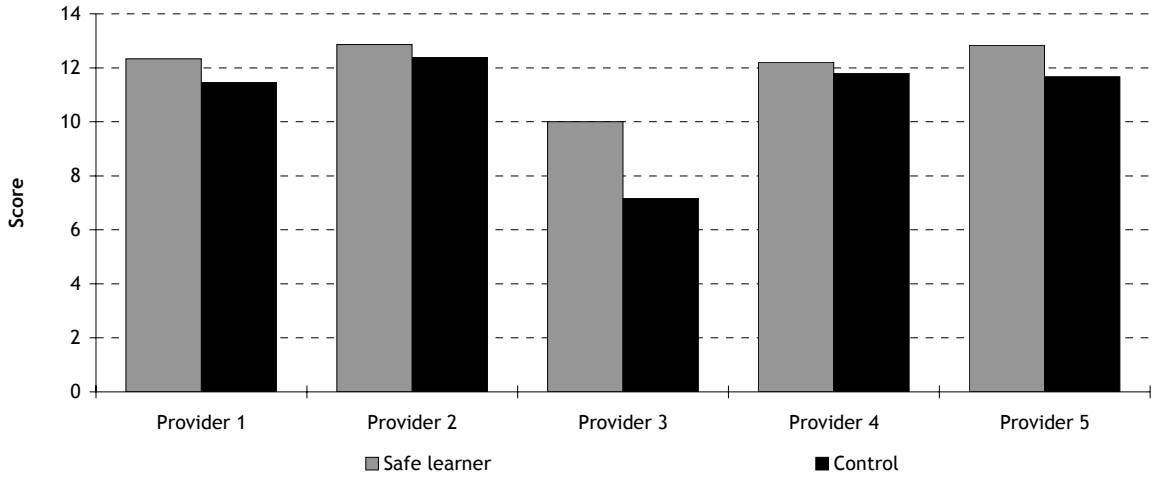
Figure A5.2: Total number of correct knowledge answers at sites supplying both safe learner and control groups



N (SL) = 53; N (C) =53

Source: IES H&S survey, 2006

Figure A5.3: Total number of correct behaviour answers at sites supplying both safe learner and control groups



N (SL) = 53; N (C) =53

Source: IES H&S survey, 2006

Appendix 6: Voucher Receipts

Safe Learner pilot

Receipt form for pilot participants

This is to confirm that I received a gift voucher to the value of £20.00 as a reward for participating in the health and safety test for the Safe Learner project.

Print Name: .....

Address: .....

Signature .....

Safe Learner pilot – non-SL participants

Receipt form for individuals who sat the H&S test but did not take part in the Safe Learner pilot

This is to confirm that I received a gift voucher to the value of £10.00 as a reward for participating in the health and safety test.

Print Name: .....

Address: .....

Signature .....

Appendix 7: Administration Instructions

Administration of the Safe Learner Questionnaire to Safe Learner Groups

Thank you for agreeing to administer the Safe Learner Questionnaire on our behalf.

The questionnaire should be administered under conditions as close to normal test conditions as possible – ie, a reasonably quiet room, with learners individually seated and with learners not talking to each other while they are working through the test. We are not being too prescriptive about this - individually seated around a workshop for instance would be fine. The important thing is that they should ***not*** *take the test away in between your handing it out to them and collecting it back in; and they should not be able to collaborate on the test.*

Could you please read out the following instructions when you are ready to hand out the test:

Thank you for agreeing to take part in this questionnaire about health and safety knowledge. The Learning and Skills Council, which funds vocational training in England, is trying out a new way of teaching health and safety in a few sites around the country, and to see if it is effective they are going to compare how people do on this test in groups such as this one where we have been trying this out, and also in groups that have so far not tried out the new approach. So the researchers are **not** going to be looking at how well you do as individuals, but how well you all do overall, as a group.

I am going to hand out the test questions now. Please don't talk to each other once I've given out the test. There is no time limit, but ideally it should take you no longer than half an hour to fill out. **[*Hand out questionnaires so that the front page is uppermost, and ask them not to turn the pages until you have finished giving the instructions*].**

You can see on the first page that you are asked for a few details about yourself, and about what you have been told in training sessions and in work, but you are not asked for your name. As I've said, this is because the researchers won't be looking at your individual score. Ask me if anything doesn't make sense on the first page.

When you turn to the second page, you will find that the test is a multiple choice test. You are asked to tick just one answer, the one you think is right, for each question. After that, you are asked to circle a number from one to five, that indicates how confident you are that the answer you have given is the right one. After that, you are asked to say whether or not you can remember if you have been told this by either your tutor or your workplace supervisor. It's ok to tick both boxes if you've been told this both in a training session and in the workplace. If you don't think you've been told this by anyone, it's ok to leave both boxes unticked.

If you have any queries, ask me, but please don't talk amongst yourselves until you've finished the test. When you've finished, bring your completed test form to me

[A*lternatively, depending on your preference*:] When you've finished, put your hand up and I will collect your questionnaire.

If your learners have already specified their voucher choice: When you've finished and handed in your questionnaire, I can give you your reward voucher. You'll need to sign the form that I have here to say that you've received the voucher.

If your learners have not specified their choice of voucher: When you've finished and handed in the questionnaire please sign the form to say what type of gift voucher you would prefer as a reward for taking part. The researchers will then send the vouchers to me and I will let you have them later this month.

Is everything ok or does anyone have any questions? When everyone has finished I will hand out the answer sheet so that you can see what the right answers were. You can start filling out the questionnaire now.

Administration of the Safe Learner Questionnaire to Control Groups

Thank you for agreeing to administer the Safe Learner Questionnaire on our behalf.

The questionnaire should be administered under conditions as close to normal test conditions as possible –ie, a reasonably quiet room, with learners individually seated and with learners not talking to each other while they are working through the test. We are not being too prescriptive about this - individually seated around a workshop for instance would be fine. The important thing is that they should ***not*** *take the test away in between your handing it out to them and collecting it back in; and they should not be able to collaborate on the test.*

Could you please read out the following instructions when you are ready to hand out the test:

Thank you for agreeing to take part in this questionnaire about health and safety knowledge. The Learning and Skills Council, which funds vocational training in England, is trying out a new way of teaching health and safety in a few sites around the country, and to see if it is effective they are going to compare how people do on this test in those trial sites and in places like this, where we have so far not tried out the new approach. So the researchers are not going to be looking at how well you do as individuals, but how well you do as a group.

I am going to hand out the test questions now. Please don't talk to each other once I've given out the test. There is no time limit, but ideally it should take you no longer than half an hour to fill out. *[Hand out questionnaires so that the front page is uppermost, and ask them not to turn the pages until you have finished giving the instructions].*

You can see on the first page that you are asked for a few details about yourself, and about what you have been told in training sessions and in work, but you are not asked for your name. As I've said, this is because the researchers won't be looking at your individual score. Ask me if anything doesn't make sense on the first page.

When you turn to the second page, you will find that the test is a multiple choice test. You are asked to tick just one answer, the one you think is right, for each question. After that, you are asked to circle a number from one to five, that indicates how confident you are that the answer you have given is the right one. After that, you are asked to say whether or not you can remember if you have been told this by either your tutor or your workplace supervisor. It's ok to tick both boxes if you've been told this both in a training session and in the workplace. If you don't think you've been told this by anyone, it's ok to leave both boxes unticked.

If you have any queries, ask me, but please don't talk amongst yourselves until you've finished the test. When you've finished, bring your completed test form to me *[alternatively: put your hand up and I will collect your questionnaire]* and sign the form that I have here to say what type of gift voucher you would prefer as a reward for

taking part *[apprentices may leave at this stage]*. The researchers will then send the vouchers to me and I will let you have them later this month.

Is everything ok or does anyone have any questions? When everyone has finished I will hand out the answer sheet so that you can see what the right answers were. You can start filling out the questionnaire now.

Appendix 8: Answer Sheet

Answers

We are unable to provide you with your personal score on the test but you might like to know that the correct answers were as follows:

Q1. What should you do if you discover something that could cause an accident at work?

If you encounter this situation you should alert your colleagues to the problem (to make sure they do not have an accident) and then tell your supervisor immediately. If your own supervisor is not around you should tell the most senior person you are working with.

Q2. What should you do if the fire alarm sounds?

You should always respond to a fire alarm unless you have been told in advance that it is a test. If you are working with equipment that could be dangerous if left unattended, then make the equipment safe if possible, then leave the building immediately by the route indicated by the green running man signs.

Q3. All new fire extinguishers are coloured red. How do you identify the different types?

Although extinguisher do vary by size, shape and weight, the correct way to identify the different types is by the colour panel or band on the body of the extinguisher

Q4. Whose responsibility is health and safety at work?

It's everyone's responsibility.

Q5. What is the maximum weight that an individual may lift?

Technically, the correct answer is the weight you can lift comfortably. There is no specified maximum weight. However, you should be aware that there are guideline limits that you will find in the HSE booklet 'Getting to grips with manual handling'. There are different guideline limits for males and for females. Working within the

guideline limits will reduce the risk to you if you do need to lift heavy objects in the course of your work.

Q6. How would you recognise a hazardous substance?

By a symbol on the container. It should be in a suitable container, but you should always check the symbol to be sure. Don't sniff it!

Q7. A person has received an electric shock and is still in contact with the live circuit. What should you do?

If there are other people nearby, call for help immediately and, if possible, switch off the electricity yourself. Then fetch, call or phone for help if help hasn't arrived by this time. If there is anything around that does not conduct electricity and could be used to remove them from the electric source) then ideally you should try to get them away from the source once you have switched it off.

Q8. How should you stack items you don't need for a while?

Stack them somewhere where you can reach them easily and they are not liable to fall. It's a good idea to stack them out of the way, near to where you work and where they can still be seen, but the most important thing is to put them where you do not have to stretch or climb to reach them and they are not likely to fall on someone's head – it could be yours!

Q9. Why is it important to report 'near miss incidents'

So that lessons can be learnt and actions taken to stop it happening again. Otherwise, what is a 'near miss' this time could be an accident next time.

Q10. What should you do if you are asked to operate a piece of equipment that does not have a guard or emergency stop?

You should refuse to use the equipment until it is fitted with a guard or safety stop.

Q11. If you are in work and you find someone lying on the floor who has just had an accident, what should you do?

You should fetch (or phone) one of the named first aiders, your supervisor or manager immediately.

Q12. If your job means that you keep coming into contact with hazardous materials what should you do?

You should not come into direct contact with hazardous materials — your employer should carry out a risk assessment and implement a safe system of work that prevents contact. This might include issuing personal protective equipment to you for some types of work and if this is given to you then you must use it.

Q13. If your supervisor asks you to do something you have not been trained to do what should you do?

You should tell your supervisor you have not been trained and ask for training before you proceed with the work.

Q14. You need to put some heavy files into a four-drawer filing cabinet. Which is the best drawer to put them in?

The bottom one. Any higher and there is a danger that the filing cabinet will topple over under the weight of the files when the drawer is open. Also, lifting them out of the top drawers may mean lifting heavy items above your shoulder height, which is not recommended.

Q15. What should you do if you discover a colleague doing something that could endanger them or others in the workplace?

You should ask the individual to stop doing it and tell your supervisor because, even if they stop, this still constitutes a 'near miss'. You might feel bad about telling your supervisor but you will feel even worse if there is an accident because you didn't do anything to stop it happening.

Q16. What constitutes a hazard in the workplace?

A hazard is anything with the potential to cause harm, damage or loss to a person

Q17. After an accident has happened, what is the best way to make sure the same thing doesn't happen?

Investigate the accident to make sure the causes of the accident are fully understood and then deal with them. Sometimes the causes of an accident are not obvious, so giving people some training, or telling them to be more careful, may not fix the problem.

Q18. What does the term 'risk' mean?

Risk means the likelihood of harm being caused

Q19. If you need to get heavy items down from shelves or racking that are higher than you can reach, what should you do?

Ideally you should use a stepladder and pass the items down to a colleague. However, because there sometimes may not be anyone around to help, if you ticked 'use a stepladder' we have also counted this as a correct answer for this question.

Q20. When you are using a computer, how often should you take a 'screen break' (a short break from using the keyboard)?

No specific frequency is specified in health and safety legislation, but ideally you should take a screen break around every 45 minutes.

Q21. Why should there be regular inspections of the workplace?

To check whether the working environment is safe. But obviously this then helps ensure that everything is OK when the premises are inspected by an enforcement officer.

Q22. What is the over-riding piece of health and safety legislation that applies to all workers and employers in England?

The legislation is called the Health and Safety at Work Act 1974. You will often find this abbreviated to HASAWA 1974.

Q23. What does the term MEL stand for?

It stands for maximum exposure limit.

Q24. What statement best describes a control measure?

A control measure is a procedure to remove or reduce risks.

Q25. Who can be prosecuted for a breach of Health & Safety Law?

Any employee of the organisation.

Q26. What do the initials COSHH stand for?

The initials stand for Control of Substances Hazardous to Health.

Q27. What colour should a First Aid box be?

A first aid box is green.

Q28. At what age is a person classified as a 'young person' under safety legislation?

Under safety legislation you are considered to be a 'young person' if you are aged under 18.

Thank you very much for your help with this research that the Institute for Employment Studies is carrying out on behalf of the Learning and Skills Council. The research is trying to assess whether changes that are currently being tried out in the way that health and safety is taught can improve the safety of learners while they are training. A report of the outcomes of the research will be available from the Learning and Skills website from early April. If you have any enquiries about the project please contact the project manager Dr Linda Miller on 01273 873114.

Appendix 9: Performance of Test Items

Performance of test items (per cent)

	Overall correct	Overall correct by high performers N = 101	Overall correct by medium performers N = 79	Overall correct by low performers N = 45
1. Discover something that could cause accident	91	96	90	82
2. If fire alarm sounds	82	95	76	64
3. How to identify fire extinguisher	82	94	92	36
4. Whose responsibility is health and safety at work	83	95	89	44
5. Maximum weight an individual may lift	72	83	72	44
6. How to recognise a hazardous substance	93	98	96	92
7. Electric shock	76	90	76	44
8. How to stack items	71	78	72	51
9. Why report near-miss incidents	48	62	37	38
10. If no guard on equipment	76	89	67	64
11. If find someone who has had accident	96	99	99	96
12. Come into contact with hazardous materials	70	92	58	44
13. If asked to do something not trained for	88	96	92	64
14. Heavy files in cabinet	81	91	76	69
15. See someone doing something dangerous	65	79	56	51

	Overall correct	Overall correct by high performers N = 101	Overall correct by medium performers N = 79	Overall correct by low performers N = 45
16. What is a hazard	80	98	87	27
17. How to ensure no repeat of accident	78	95	77	42
18. What is a risk	80	95	86	34
19. Heavy items on shelves	96	99	92	91
20. How frequent should screen breaks be	66	77	67	38
21. Why should there be regular inspections	92	97	95	73
22. Name of health and safety legislation	84	97	84	56
23. what does MEL stand for	15	18	11	16
24. What is a control measure	68	89	60	33
25. Who can be prosecuted	48	68	42	11
26. What does COSHH stand for	85	98	86	53
27. What colour is a first-aid box	91	98	87	82
28. What age is a young person under H&S law	57	98	87	82

Appendix 10: Good Practice Example: NG Bailey

NG Bailey consented to waive their right to anonymity when it was revealed that their learners had far exceeded all other groups that took part in the health and safety test. It should be noted that their excellent record in health and safety has been noted elsewhere: their ALI report makes a range of complimentary comments, and extracts are shown in the box below.

A particularly thorough induction process for modern apprentices in construction, supplemented by mini inductions at each construction site they work on during their apprenticeship.

This thorough set of induction procedures is particularly relevant to the construction sector, where there is still a need to improve health and safety and decrease the number of reportable accidents. Every possible step is taken by this provider to ensure the safety of its own learners and other workers on site.

This good practice in induction is suitable for adaptation by any provider whose learners need to observe particularly high standards of health and safety from the outset, or to work with contractors on site. It is essential that the staff who carry out induction are trained to do so, and that the learning materials are planned carefully and of good quality.

The mini induction to new sites helps to ensure that the basic principles learners already know are applied in new circumstances. This idea could be used in any inspection context where there is an element of work experience with different employers. It may also be adaptable by employers who use a mixture of employed and subcontracted staff.

N G Bailey and Company Limited (NG Bailey) gives modern apprentices in construction a thorough induction to their training, which is effectively reinforced at appropriate intervals during their apprenticeship. The induction procedures are comprehensive, and they are documented using flow charts and lesson plans.

There is a clearly identified range of teaching aids to accompany the training.

It maintains the quality of induction by:

- training staff to ensure consistency
- using a standard set of good-quality presentation materials

There is a particularly well-planned two-week induction for learners on electrical programmes, covering health and safety and manual handling. It gives them a good, understanding of health and safety, which they find easy to remember. A range of teaching techniques is used to make the induction stimulating and interesting, from talks and booklets to videos, practical tasks and assessments. As well as guidance on working with electricity, induction covers the storage, lifting and preparation of a range of common materials; how to use step ladders and pole ladders safely; and the main points of health and safety legislation and good practice. Safety practices are rigorously applied.

At the end of their induction, learners are given a full tool kit and a range of personal protective equipment. This enables them to contribute usefully as soon as they start work on a building site. All modern apprentices receive a comprehensive induction handbook, with the emphasis on mechanical or electrical trades as appropriate.

At induction, each learner is assigned a 'godfather' to assist with training, provide personal guidance, and support the assessor/trainers from NG Bailey's training centres. This gives them a single point of contact in the company, whether they are working on a building site or receiving off-the-job training. The company has recently introduced a buddy system to further improve the first two years of on-the-job training. Learners will have the benefit of working with a nominated skilled craftsman during this period.

Learners are well prepared for the potential hazards of working on large construction projects. The subjects covered in the main induction are reinforced frequently and consistently, and a further induction is given every time they move to a different site. NG Bailey has partnership arrangements with its subcontractors to ensure that learners will receive inductions that meet the requirements of both parties. The site safety and working rules can vary between sites, and in some cases two specific inductions may be needed. Inductions normally take about an hour.

On satisfactory completion of their site induction, learners receive a site competence sticker which is dated and specific to the contractor. The sticker is worn on their hard hat and must be clearly visible all the time they are on site. Stickers vary significantly in colour and design and are easily recognisable by other workers and safety officers. During their site stay, learners receive a site 'tool box' talk, which gives them the opportunity to discuss any areas of personal concern or incidents at work.

We spoke to the Mark Jones, Craft Apprenticeship Manager at the company and asked for his views on what factors contributed to his learners' performance. He believes the apprentices success is related to the following aspects of the company's recruitment and training policy:

- all new recruits get a week-long induction on health and safety issues

- this training is reinforced by site supervisors on site, and by supervisory assessors
- apprentices are constantly assessed, trained and tested. This includes a health and safety quiz as part of their on-site assessment.
- health and safety training is a big part of the courses. For example, electrical installation apprentices complete a CSES test at the end of their first week
- all supervisors attend a 'Safety for Supervisors' training course, which is run by the company's safety department
- trainers and assessors all have an IOSH 'Managing Safely' qualification
- the company has a good record in health and safety. The health and safety department always try to keep up to date with health and safety issues and constantly update and train supervisors and assessors
- toolbox talks are held regularly by supervisors on site and by health and safety advisers when they are on site visits
- all apprentices are both trained and employed by NG Bailey
- the selection process used by NG Bailey, ensures that recruits have a good numeracy and communication skills and therefore have a good basis to work from. Recruits must have GCSEs at a minimum of grade D in Maths, English, and one science subject. Applicants must also complete a 'Saville and Holdsworth Technical Test Battery'.