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**'Choose Safety'**  
**An evaluation of a Health and Safety module  
for use in secondary schools**

**Draft Final Report**

**Health Promotion Research Centre  
January 2009**

**Ms. Victoria Hogan, Dr. Margaret Hodgins and Ms. Marie Galvin**



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**We would like to gratefully acknowledge the help given to us by Larissa Kaminskyj in the collection of data and statistical analyses.**

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## *Executive Summary*

### **Introduction**

Trends across a number of countries including Ireland indicate a high level of part-time employment in post-primary students. Research evidence indicates that such younger workers are at increased risk of non-fatal injury within the workplace, even in sectors traditionally perceived as low risk (Loughlin & Frone, 2004).

### **Aims and Objectives**

The overall aim of this project was to comprehensively evaluate the pilot of the 'Choose Safety' module developed by the H.S.A. The module is a teaching and learning pack for post-primary students. The main objectives of the study were to: provide a profile of the types of employment students in the roll-out area schools were engaged in and estimate length of working hours, to assess the impact of the programme upon the students' knowledge of health and safety information and upon their safety beliefs and behaviour, to assess the 'Choose Safety' module process i.e. the perceived usefulness of the structure and appropriateness of the content of the module material, etc. from the students, teachers and coordinators involved in the pilot, and finally, to assess the operational aspects of the programme i.e. the methodology employed to recruit schools and teachers and the delivery of the packs and support provided to the teachers.

### **Methodology**

The methodology employed consisted of three separate but related strands. A quantitative pre-post survey questionnaire was developed for the students taking the 'Choose Safety' module which measured the change in learning of health and safety information and changes in safety behaviour and beliefs after completion of the module. In addition the students were surveyed on 'process' issues also, such as the suitability of the material, their main likes and dislikes, etc. with regard to the programme. Following the questionnaire element, three class discussion sessions were held with students who had completed the course to add additional qualitative perspectives to the quantitative information collected.

The second strand consisted of a questionnaire sent to the 56 participating teachers to assess the 'process aspects' which they perceived to be relevant. The questionnaire consisted of both open and closed ended questions which investigated issues such as enjoyment, ease of use, acceptability of methods and materials, etc.

The third strand of the methodology involved a group discussion with five of the six area coordinators to gain a qualitative perspective on operational issues. This session explored issues such as the effectiveness of the distribution model chosen and issues around sustainability.

In total, 64 schools, which involved 105 class groups and 56 teachers, were invited to participate in the evaluation. Both quantitative and qualitative techniques were used to assess the data obtained. All questionnaire data was analysed using quantitative statistics. Qualitative content analysis was conducted to analyse open ended questions and discussion group information.

## **Results**

Eight class groups (176 students) acted as a control group. Seventy one class groups (1,277) students in the intervention group returned pre-intervention questionnaires and 36 groups in total returned post-intervention questionnaires. Therefore the overall response rate was 46%. Out of the 56 participating teachers a total of 29 completed the post-intervention questionnaire giving a response rate of 52%.

The majority of students completing the 'Choose Safety' module were in Transition Year and were aged between 15 and 16 years (87%). An employment rate of 44% was reported, with many students engaged in long hours of work e.g. 25% reporting work hours in excess of 11 hours per week. Male students predominated in sectors such as construction (10%) and motor/garage (10%), while female students predominated in caring roles (18%) and hospitality (28%) and retail (39%). Only 33% of working students received safety training from their employer.

A positive change in learning was demonstrated by the intervention group between the pre and post intervention questionnaire responses. Very few significant differences were observed when the knowledge results were analysed by class group. Completion of the 'Choose Safety' module had little influence on student safety behaviour as measured by two questionnaire subscales and had little influence on safety beliefs. The students were generally positive about the 'Choose Safety' material, with more enjoying it than not. However, 28% considered the material too easy.

Teachers reported in general that they enjoyed teaching the 'Choose Safety' module, perceived student interest to be high and that interaction in class was good. All units, project work and the DVD were commented upon in positive terms. However, time constraints was the most frequently raised difficulty. The coordinators also responded favourably at their discussion session and comments were generally positive, however, the sustainability of the programme using the current coordinator system was questioned.

## **Conclusion**

In general, it can be concluded that both teachers and students enjoyed the 'Choose Safety' module with more liking it than not. However, there were indications from the student feedback sessions that the material may have been under pitched, with many regarding the material as too easy. Positive changes were observed in learning of health and safety knowledge as can be expected in a class room setting, however, minimal changes were observed in student safety behaviour or beliefs. This is consistent with findings in the literature on curriculum-based health education interventions. Programmes that result in changes in behaviour and attitude require multi-component approaches.

## **Recommendations**

A number of recommendations are proposed with the aim of addressing both the method of delivery and sustainability of the programme. The principal recommendations include: revisions of the materials in line with student and teacher feedback, consideration of additional components for example experiential elements, involvement of students in the revision of material, provision of a separate activity workbook to allow re-use of student guidebooks in order to reduce costs, a cost-benefit analysis of the coordinator structure, and the inclusion of an occupational psychologist's input in the module review to encourage attitude and behaviour change.

## *Introduction*

The number of Irish teenagers in second level education who work in paid employment has increased substantially in recent years (McCoy and Smyth, 2007). There are many positives associated with engagement in formal work for young persons such as enhancing self-esteem, learning job skills, generation of income, accepting responsibility and dealing with people (Davis, Castillo & Wegman, 2000; Wegman & Davis, 1999). However, the workplace is not without risks for young workers. Young persons who work in excess of 20 hours per week are less likely to advance as far in school as other students, and are more likely to smoke, use illegal drugs and become involved in deviant behaviour. In addition, they may get insufficient sleep, exercise and spend less time with their families (Wegman & Davis, 1999). Institutes responsible for occupational health and safety across a number of countries report that young workers are higher risk than older aged workers for non-fatal occupational injuries. (EASHW, 2007; H.S.A., 2007; NIOSH, 2007; and Screenivasan, 2001) The recognition of this high risk status coincides with the realisation that occupational health and safety awareness needs to be engendered in our future workforce at a much earlier stage rather than when they first arrive in the workplace.

One aspect of the Health and Safety Authority's (H.S.A.) mission is to promote, through education, awareness of health and safety matters and to encourage a prevention culture among young people at work. The main mechanism for achieving this aim is the development of the 'Choose Safety' module for secondary school students in the Senior Cycle, who are already in part time employment or are on the brink of employment. The European Agency for Safety and Health at Work (2004) provides evidence from across the EU-25 countries where the school setting has been chosen to conduct interventions aimed to increase health and safety awareness. Unfortunately in a number of cases, the interventions are not evaluated; therefore, the process and impact of the programmes cannot be objectively assessed. The H.S.A. has recognised the importance of gaining their target audiences' perspective on the 'Choose Safety' Programme and has chosen to fully evaluate the pilot of the 'Choose Safety' module.

### **1.1 Young people at work**

Research evidence is available from many countries which indicate that many school-aged young persons are engaged in formal employment (H.S.A. 2007; NIOSH, 2007, Screenivasan, 2001). Trends in employment reveal that young workers are predominantly engaged in part-time, low paid work, in non-standard type jobs, and are largely located in the service sector. This work is largely undertaken for discretionary income (Davis, Castillo, & Wegman, 2000). Reports from many countries, including



Ireland show that young worker employment is increasing and extensive. For example, Screenivasan in Britain (2001) reports that young people are far more likely to work now, versus fifty years ago. Indeed, a number of studies have all suggested that it is very common for secondary school students in Britain to hold part time jobs (Dustman et al., 1996; Hodgson & Spours, 2000; Payne, 2003). However, it has been cautioned in the literature that this area is still under-researched and that numbers available may underestimate the numbers of young workers, as figures may not be available for young persons engaged in family business, farming work and babysitting.

The National Institute for Occupational Safety and Health (NIOSH) reports that in the US, in 2007, 2.3 million adolescents (aged 16-17 years) were at work. According to Dunn et al. (1998) approximately 28% of 15 year olds and 42% of 16 and 17 year olds are employed, and this often includes jobs from which they are prohibited by law. At EU level, in 2005, 193.8 million people were employed in the EU-25 countries. This overall workforce figure includes 20.4 million young workers (aged 15-24 years), which represents 10.5% of the European workforce. Young workers tend to work less often in full time employment (72% versus 82% of total workforce) and more often on temporary contracts (39% versus 14%). And in 2005, one in four young workers had a part time job. Research evidence exists to show that there are increased risks for persons involved in either temporary or part time work. For part-timers this is due to less access to training, career progression, lower salaries and social security benefits. And for temporary workers, there is again, less access to training, less job control, and less information available about workplace risks (European Agency for Safety and Health at Work, 2007).

The hospitality sector is the number one employment sector for young workers in Europe, with 22.7% of young workers employed in hotels and restaurants and 16.3% in trade. Traditionally such sectors were not deemed to be 'high risk' for occupational injuries and illnesses, however the EASHW (2007) notes that this particular distribution of workers towards the service/hospitality sector is important due to the potentially harmful conditions associated with this type of work i.e. low pay, temporary work, seasonal work, physically demanding work and poor employment conditions.

The number of Irish teenagers in second level education who work in paid employment has increased substantially in recent years (McCoy and Smyth, 2007). This may be in part due to unprecedented economic growth in Ireland and the rapid expansion of the service sector (ibid). The authors recount figures from a previous 2004 study which reports that 25% of Junior Certificate students and 31% of Leaving Certificate students worked in 1994. In 1999, the level of participation of Leaving Certificate students in the labour force had risen to 51% and increased again in 2002 to 61%. In addition to this, the number of hours worked by secondary school students over the same time period has also increased e.g. in 1994, 39% of working Leaving Certificate students worked more than 10 hours per week, however, in 2002 this figure had risen to 61%. According to the Central Statistics Office (2008) there

were 2,237,200 persons in the Irish labour force in the first quarter of 2008. National statistics reveal that in 2008 there was a total employment rate of 22.2% for young workers in Ireland (aged 15-19 years). Young males achieved an employment rate of 23% and young females achieved an employment rate of 21% (ibid).

## **1.2 Risk to young people in workplace**

Loughlin and Frone (2004) state that there is a consistent trend in the literature which reveals that the prevalence of nonfatal workplace injuries decreases with increasing age. Castillo (1999), Center for Disease Control and Prevention (2001), Dupre (2000), Human Resources Development Canada (2000), and NIOSH (1995, 1997) are all cited by the authors in support of this statement.

According to European data, young persons are in fact more at risk in the workplace; the incidence rate of non-fatal accidents is 40% higher among those aged 18-24 years, with male workers particularly at risk (EASHW, 2007). The EASHW argue that young workers have a low incidence of fatal accidents within the workplace, which is in line with global trends. NIOSH in America states that in 2006, there were 30 workplace fatalities which involved persons less than 18 years of age. In Ireland, in 2006, one young person (aged 10-14 years) died in the agricultural work sector while in 2007 there were three fatalities involving persons less than twenty years old. Two persons aged 15-19 died while working in the fishing sector and one young person (aged between 10-14 years) died in the agricultural setting. (H.S.A., 2008)

According to Dunn et al. (1998), a review of literature on occupational injuries sustained by young workers revealed that the types of non-fatal injuries typically sustained and reported by young workers tend to be lacerations, strains/sprains, burns, and fractures. The latest Irish figures available from the H.S.A. reveal that in 2007, over 700 of reported injuries involved persons aged 15-19 years. This accounts for 10% of all injuries reported in 2007. This figure is higher than the 2006 level which stood at 5% of all reported injuries involved 15-19 year olds. When reviewed in terms of numbers, the figures for young person injuries have increased year on year since 2005, with 182 injuries reported in 2005, 330 reported in 2006 and 730 reported in 2007. When analysed by sector, the H.S.A. report that the injuries sustained by young persons occurred in a variety of work sectors i.e. Hotels and Restaurants (20% of all accidents), Agriculture (18% of injuries) and Wholesale and Retail Trade (17% of all injuries).

In terms of personal health, young workers are found to be at lower risk for occupational illness and disease than older workers, which may be due to the temporary and part-time nature of the work in which they are engaged. The main illnesses of concern for young workers include: dermatitis, upper limb disorders and stress (EASHW, 2007).

The EASHW warns that we face a number of problems when reviewing data on young people in the workplace; firstly it is difficult to obtain specific data for young workers on sectors and occupations in which they are located and there is also likely to be an under-reporting bias as young workers may lack the knowledge of the correct reporting process. Therefore, the data that is available tends to be non-comparable, from individual member states and/or one-off studies (EASHW, 2007). Loughlin & Frone (2004) also note the difficulties in estimating absolute prevalence of injuries to young workers due to research disparities. For example, studies differ in terms of the definition used for work 'injuries' and 'employment'. Some studies classify injuries by time missed from the workplace e.g. one day; whereas others like Ireland, for instance, classify incidents by missing three days from the workplace. Other studies classify injuries by need for medical or hospital attention and other studies investigate occurrence of ever sustaining an occupational injury. Official numbers may underestimate the true picture due to under-reporting of injuries and finally, many studies fail to address the range of injuries which can occur in the workplace and do not adequately cover the young worker population.

### **1.3 Risk factors for occupational injuries**

The Irish statistics and research evidence from other countries show that young workers are potentially vulnerable in the workplace and at high risk of injury. Young (1998) is quoted by the Health and Safety Laboratory (2001) as stating that '*...young workers want to get busy, they want to do the job. They do not think about the effects of bad workplace conditions...*' (pg26). From a review of the literature Frone (1998) has identified five general categories of risk factors for young workers: demographics, personality, substance use, employment characteristics and emotional and physical health.

A consistent finding in the literature is that gender is a risk factor: young male workers are often at increased risk of injury and illness in the workplace. Byrnes, Miller & Schafer (1999) contend that adolescent males are more likely to engage in risk taking behaviour. An alternative argument put forth by Dunn, Runyan & Cohen, (1998) is that males are more at risk due to the sectors and occupations in which they work i.e. more hazardous industries. Frone (1998) investigated gender differences by exploring 20 possible mediating variables. The analysis revealed that the increased risk for males was a result of the sectors in which they are employed (i.e. tend to be more hazardous) and due to the use of intoxicants in the workplace. When these two factors are controlled for, the risk between males and

females is equivalent. Physical stature is also espoused as a risk factor for young workers (Davis, Castillo & Wegman, 1998), because most work tasks and processes are designed for grown adults.

The EASHW (2008) suggests that one of the factors attributable to the higher accident rate in young workers is their propensity towards risk taking. Loughlin & Frone (2004) condensed the extant literature into a number of personality variables found to be related to risk taking: sensation seeking, negative affectivity, rebelliousness and impulsivity.

Loughlin and Frone (2004) state that a significant body of evidence shows that personality dimensions are related to risk behaviour in young persons e.g. dangerous driving, drinking and driving, alcohol use, contraception and illicit drug use. However, investigations into the relationship between personality factors and workplace incidents are scant. Frone (1998) reported a relationship between high negative affectivity and injury at work in employed adolescents. However, he concludes that overall more research is required in this area before the relationship between personality and occupational injury and illness is fully understood. It can be argued that because a relationship has been proven to exist between personality traits and forms of risk-taking outside the workplace, that these results could be extrapolated to risk-taking within the work environment.

Young workers tend to be concentrated in particular sectors such as hospitality and retail/trade. Irish statistics indicate a relation between the sector where young people work and the likelihood of illness and injury. For example, much of the work in the hospitality sector is of a physical nature and implies strenuous work, as recognized by Hesselink et al. (2004), including carrying heavy loads as a waiter, lifting beds and furniture for room personnel and carrying bulk food packages for kitchen personnel. Ergonomic risk factors also include standing for prolonged time periods, repetitive movements, inadequate space and different floor levels. Working irregular hours which are common to the hospitality sector e.g. overtime, split shifts, can put young workers at risk of fatigue, thereby increasing their risk of injury (Young & Rischitelli, 2006). Zakocs et al. (1998) found that the retail sector, traditionally not regarded as high risk, accounted for the largest proportion of non-fatal injuries in adolescents. Frone (1998) also found that physical hazards, heavy workloads and boredom are all risk factors associated with injury for young workers.

The evidence from studies of emotional and physical health and young workers' occupational risk is not large and is lacking in its ability to draw causal inferences. However, some studies of adult workers do reveal a positive relationship between depression and work injury, possibly due to interference with information processing, job performance and role functioning. Frone (1998) did investigate both constructs and found a positive relationship between both poor physical health and depression in work injuries in adolescents. Davis, Castillo & Wegman (2000) cite a number of potential physical risk

factors which may increase young workers risk e.g. variability in size and the disparity between physical and psychological maturity; therefore, young workers may be physically able for work tasks, but unable to process emotionally or cognitively certain aspects of their work.

Young & Rischitelli (2006) argue that adolescents are also vulnerable due to the development phase they are in and Golub (2000) notes that many of their systems are still developing and changing e.g. reproductive, respiratory, skeletal, immune and central nervous system. Exposure to occupational toxicants during this critical time may cause lasting or amplified damage (Golub, 2000).

McEvoy and Smith (2007) detail the impact of working and attending secondary school on the students' long term career prospects. In addition, the short term fatigue aspect of combining work and school for young persons' health and safety should be considered. Possible outcomes include increased day time fatigue and inadequate sleep which may increase risk of injury (Davis, Castillo & Wegman, 2000).

In relation to substance use and occupational injuries, adult research in this area fails to show a consistent relationship. Loughlin & Frone (2004) believe this is probably due to not differentiating between overall use and on-the-job usage. Most studies have relied on overall usage. Frone (1998) investigated both overall and on-the-job substance use in relation to adolescent injury and illness at work. It was found that on-the-job substance use was significantly related to workplace injuries.

Studies reveal the importance of our attitudes, values, beliefs and perceptions about our health and safety and how these translate into safety practice. For example, Crowe (1995) has reported that females are more safety conscious than males. Crowe (1995) investigated the impact of safety values, gender, class standing, and demographics on college students' safety practices. It was found that safety values were a better predictor of safe practice than all of the other three factors combined. This finding was subsequently supported by a similar study by Blair et al. in 2004. Educators have a chance to influence values before paid employment begins, which will influence behaviour (Crowe, 1995). Blair et al. (2004) recommend, based on their findings, that safety education should be focused on changing safety beliefs and emphasizing personal responsibility as a way of preventing injuries. The importance of influencing beliefs is underpinned by a number of health models according to Blair et al. (2004) who cite the Health Belief Model, the Transtheoretical Model, the Theory of Reasoned Action and the Theory of Planned Behaviour as evidence of the greater importance of beliefs over knowledge in determining behaviour.

Young & Rischitelli (2006) state that young persons have a different mentality from adults and note the common perception that young persons willingly take risks or have notions of invulnerability. However Cohn et al. (1995) have argued that when compared to adults, young persons do not perceive their actions as unsafe. Therefore, young persons may differ in their ability to accurately perceive risk. Deery (1999) concluded from his study of young novice drivers, that young drivers underestimate their risk of an accident in a variety of traffic situations and at the same time, over-estimate their own driving skill. It is a real possibility that these types of perceptual difficulties around risk judgement extend into the workplace.

Screenivasan (2001) outlines a 'mental models' approach to explain why young persons are at higher risk within the occupational setting. In this explanation, it is suggested that young persons, in trying to make sense of the world, process new information within the context of their existing beliefs (i.e. their mental model). If a young person's mental model is in some way flawed, then they may put themselves at risk because they incorrectly judge themselves to be safe. The Health and Safety Laboratory (2001) also argue that adolescents may not have the necessary social skills needed to communicate with adults in the workplace, which may affect seeking information and getting feedback.

#### **1.4 Legislative context**

All employers must meet the requirements of the Safety Health and Welfare at Work Act, 2005. In addition to this, specific young persons' legislation includes the Protection of Young Persons (Employment) Act, 1996 and the Safety, Health and Welfare at Work (Children and Young Persons) Regulations, 1998. Two Codes of Practice are also available entitled 'Concerning the Employment of Young persons in Licensed Premises' and 'Preventing Accidents to Children and Young Persons in Agriculture'.

The 1996 Act stipulates the working hours that young persons may legally engage in, both during and outside of the school term. For example, an employer may employ a person of 15 years or older during the school term as long as the working hours do not exceed eight hours per week. The 1998 Regulations require the completion of risk assessments specific to young persons in the workplace, which must take account of the physical and psychological capacity of the young person as well as the hazards and risks inherent in the workplace and tasks. Certain occupational tasks and processes are prohibited for young persons under the 1998 Regulations. The 1996 Act also provides a legal definition of a young person and a child, which constitutes being between 16-18 years of age and less than 16 years old, respectively.

Although legislation is in place, the level of awareness of employers with regard to the specific young person's legislation could be questioned and as stated by McCoy and Smith (2007), there may also be queries with regard to the actual enforcement of such legislation on the ground as there is a lack of convictions for breaches of this legislation. Support for this notion comes from the work of Screenivasan (2001), who recounts how a study conducted in Britain in 2000 revealed that four out of five small businesses did not assess risks to young persons before starting work, did not provide any health and safety information to the young person's parents and doubted in many cases that the young person was in fact ready for the job they were employed to do (Norwich Union, 2000). The intentional and unintentional breakage of such legislative requirements may increase the risk to young persons within the workplace. In addition, researchers in this area also note that young persons themselves often fail to understand their worker rights and may not be aware of legal prohibitions (Young & Rischitelli, 2006).

### **1.5 Need for interventions**

The school is seen as a critically important setting for health promotion, not just because the potential for promoting health in many interconnected areas, but also because the learning of health-related knowledge, attitudes and behaviour begins at an early age and once adopted, may be practiced throughout adult life. The World Health Organisation strongly supports the role of schools and has stated 'an effective school health programme can be one of the most cost effective investments a nation can make to simultaneously improve education and health' (NicGabhainn, Kelly & Molcho, 2007). An educational environment offers potential for introducing specific health and safety education, such as the 'Choose Safety' module.

Gibbons & Gerrard (1995) report that efforts to educate young adults with regard to the health and safety consequences of their behaviour have increased dramatically in the past decade. The H.S.A. is not alone in its efforts to increase awareness of health and safety issues among young adolescents; in the US, NIOSH (2007) has developed the 'Youth @ Work: Talking Safety' initiative, which is designed as a foundation curriculum in occupational safety and health and customized to each state. In the UK, the 'Check it Out' video pack is available from the Health and Safety Executive (HSE) and targets adolescents aged 14-18 years old who are about to embark on work placements. It aims to "raise levels of awareness amongst pupils of the need to assess, manage and control work placement related risks" (EASHW, 2004) and contains a video, teacher information pack and student exercises. Although not formally evaluated, the response to this British initiative is regarded as positive, with 1500 packs distributed in the first three months following the launch. In Canada the 'Job Safety Skills for Young Workers' programme began in Alberta in 1996. The course is divided into three modules: personal safety management, workplace safety practices and safety management systems. It was completed by

5600 students in 290 schools, and encompassed 75 hours. The course and materials are available free of charge to schools (EASHW, 2004).

Reed, Kidd, Westneat and Rayens (2001) provide an account of the AgDARE (Agricultural Disability Awareness and Risk Education) school intervention for secondary level students in Kentucky, Iowa and Mississippi. AgDARE consists of an experiential learning curriculum and aims “to decrease the injury rate of adolescent farm children by influencing their work practices through interactive learning techniques in the form of physical and narrative simulation exercises”. Reed et al. argue that simulations are more likely to change behaviour than didactic presentation of the same material. Positive results were achieved with students who completed at least two physical and two narrative simulations showing statistically significant positive changes in farm safety attitude and intent to change behaviours.

### **1.6 H.S.A. development of ‘Choose Safety’**

The H.S.A. aims to promote a culture of health and safety awareness through training and education. Its comprehensive Education Strategy includes a specific role for Curriculum Development, in which the ‘Choose Safety’ education module is the primary development.

The ‘Choose Safety’ module was developed on foot of the Evaluation Report of the ‘Western Pilot Programme: health and safety module in post primary schools’. This pilot programme took place in 2005 and consisted of the development and delivery of five health and safety units for students in senior cycle in a number of schools in the West of Ireland. Based on the success of the pilot, it was recommended that the H.S.A continue to develop further educational tools, which could be mainstreamed within the curriculum.

In 2007 the National Council for Curriculum and Assessment (NCCA) completed a probe into health and safety in the curriculum on behalf of the H.S.A. One of the main objectives was to identify opportunities for teaching and learning related to health and safety in the primary and post-primary settings. One of the recommendations from this report was for the H.S.A. to work with a number of schools to develop a Transition Year unit. The unit should meet the NCCA template for Transition Units and be piloted and validated according to the NCCA template. Depending on the success of this effort, there may be a possibility of developing a short course in health and safety for use in the senior cycle.



The 'Choose Safety' module is designed for use in the secondary setting, and is targeted at post Junior Certificate students. Transition Year, Leaving Cert Applied and Leaving Cert Vocational Programme students are expected to gain most from this resource as they engage in work experience as part of their year. However, it is also thought to be suitable and beneficial to other students within the secondary setting.

The Education Unit in the H.S.A. developed the 'Choose Safety' module over the summer months of 2007. The workbook and DVD were developed simultaneously, with an outside film production company contracted produce the DVD. The content of the module was based on existing H.S.A. safety guidance material and the employment of sound pedagogy to ensure best practice teaching techniques for this non-traditional course. The final package was approved in July 2007 and the pilot roll-out project began in September 2007.

The 'Choose Safety' pack consists of a student workbook, a teacher guide book and a DVD. It consists of approximately 20 hours of class time, which can be included in the timetable in a number of manners e.g. block classes for part of the year or weekly classes throughout both semesters. The pack is flexible and can be used by the teacher in the manner most suited to the class and time available. The student workbook is designed around six units, which address key health and safety concepts and topics such as hazard identification, risk measurement and risk control. Lesson plans are available for teachers, along with class activities and references to additional resources. Each student who completes the module receives a Certificate of Completion. An optional major assignment is also included at the end of the pack, and students who complete the assignment are awarded a Certificate of Distinction.

Six coordinators were recruited to the pilot project to help with the delivery of materials and to act as the main liaison person with the participating schools and teachers. In the six designated pilot areas co-ordinators contacted and informed second level schools, inviting them to participate. Post-junior cycle students were targeted for the pilot scheme, particularly those in Transition Year (TY), Leaving Certificate Vocational Programme (LCVP) and Leaving Certificate Applied (LCA). On behalf of the researchers, the co-ordinators collected the following initial information from participating schools:

- anticipated timeframe for delivery of the module
- approximate planned start/completion dates
- teacher contact details
- number of class groups in each school
- student numbers within each group

Based on the information returned by the co-ordinators, estimates of required book numbers for each school were generated. The 'Choose Safety' workbooks were delivered to the co-ordinators for all the

participating schools in their catchment area. The coordinators then delivered the course workbooks and materials to the various schools and liaised with teachers to answer any questions in relation to the module. (MARGARET – IS THIS ALL CORRECT??)

## **1.7 Importance of conducting evaluation**

Health promotion, as an endeavour, aims to improve and increase control of health through a range of diverse and complimentary actions, including working through specific settings, such as schools. Within health promotion there is an explicit focus on prevention of specific illnesses and conditions and on promoting positive models of health. The ‘Choose Safety’ module is an interesting example of a health promotion intervention in the school setting, aiming to persuade students to consider health and safety in the context of their current employment. Evaluation of health promotion programmes is understood to be an essential element of programme planning and implementation, forming the basis of evidence-based practice. Rootman et al. (2001) provide a definition for evaluation in health promotion, in which they state,

*“Evaluation is the systematic examination and assessment of features of a programme or other intervention in order to produce knowledge that different stakeholders can use for a variety of purposes”* (Rootman et al., 2001 p.26).

Evaluation is needed to formally and systematically assess results, determine whether objectives have been met and establish whether methods used were efficient and appropriate. In addition, evaluation can indicate and clarify supports required by schools, students and teachers and identify good practice. A full evaluation which covers both process and impact results also allows comparison with other published school-based interventions. Further evaluation functions include determination of the degree to which the campaign reaches its objectives and gaining an understanding of how and why a particular campaign worked in order to inform future interventions (Hawe et al., 1990).

### **1.7.1 Process evaluation**

Process evaluation takes place during programme implementation (Tones & Tilford, 2001). It is, at its most simple, an evaluation of whether the intervention or programme has been implemented as planned (Hawe et al., 1990). Hawe et al. (1990) refer to further questions that can be addressed in process evaluation and these include: is the programme reaching the target audience? Are all planned activities implemented? And what is the quality of the materials used? The strengths and weaknesses of programmes are identified, but further than this, the process of programme delivery is ‘*illuminated*’, creating greater insight into programme components and their dynamic interaction (Tones & Tilford, 2001).

### **1.7.2 Impact evaluation**

Impact evaluation addresses the immediate effects of the programme, and will primarily meet the criterion of effectiveness - the extent to which programme attains its stated aims and objectives.

Published evaluations for the NIOSH and HSE programmes similar to Choose Safety are not available; therefore, it is not possible to benchmark and make comparisons.

### **1.8 This study**

This study is commissioned by the Health and Safety Authority to conduct a comprehensive evaluation of the 'Choose Safety' module which has been introduced as a pilot scheme to a limited number of post-primary schools in autumn 2007.

The aim of the study is to evaluate the 'Choose Safety' module. This is a course designed to persuade students to think about health and safety matters in their present and/or future employment. The 'Choose Safety' workbook is interactive, providing a range of individual exercises and group projects. Not only does the module offer essential information but it also encourages students to consider important issues such as bullying, communications and risk assessment.

In order to gain the perspectives of all those involved in the delivery and receipt of the Health and Safety module, mixed methodologies are being adopted to conduct an evaluation which includes impact, process and outcome indicators.

The focus for evaluation is concentrated on nine main themes:

1. Provision of profile of the types of employment students in the roll-out area schools are engaged in and the length of time they spend at work during term and during holiday time.

#### ***Impact:***

2. Assessment of the health and safety knowledge of the students based on the specific topics addressed in the educational material prior to undertaking the module and on completion of the module
3. Assessment of the health and safety behaviours and beliefs of students prior to undertaking the module and on completion of the module

#### ***Process:***

4. Assessment of perceived usefulness of the structure and content of the module material from the perspective of students, teachers and co-ordinators

5. Assessment of the efficiency of the administration of the module from the perspective of the students, teachers and co-ordinators
6. Assessment of the perceived appropriateness of the content of the module from the perspective of the students, teachers and co-ordinators
7. Assessment of the acceptability of the material and the method of delivery from the perspective of the students

***Outcome:***

8. Assessment of the extent of self-reported behaviour/attitude change as a result of the module
9. Assessment of programme efficiency

(Proposed Evaluation of the Health and Safety Authority 'Choose Safety' Module, July 2007)

### **Chapter Summary**

This chapter has focused on the extant literature which is available on young workers. In particular it has been shown that there is a high rate of part time employment in school going young persons both in Ireland and abroad. Young workers are consistently shown to be higher risk than older workers for non-fatal injuries even in the sectors that are traditionally considered 'low-hazard' e.g. retail and service sector. A number of factors contribute to this higher risk level which includes: personality, substance use, employment characteristics, gender, and emotional and physical health. In addition, it has been stated that a young person's attitude and perception of health and safety issues in the workplace are important in determining their behaviours and actions.

Evidence shows that school based interventions similar to 'Choose Safety' have been conducted in other countries; however, few seem to have been systematically evaluated. The H.S.A. has taken the important step of evaluating both the process and outcomes of the 'Choose Safety' programme.

## *Methods*

### **2.1 Study Design**

In evaluating 'Choose Safety' mixed methodologies were adopted to include both impact and process indicators. The study design was experimental with students assigned to either an intervention or control group and changes in key indicators were assessed pre and post intervention. This design was supplemented with qualitative data to explore the process of implementation. Outcome evaluation, in the form of a 12 week follow up for groups that completed the module within three months of the end of the school year (end February), was planned originally. However, in the event, all schools ran the module through to at least March and given the time constraints of the evaluation, this element was foregone.

The evaluation focused therefore on the following four areas:

1. Provision of profile of the types of employment students in the roll-out area schools are engaged in and the length of time they spend at work during term and during holiday time.
2. Impact: This included assessment of the health and safety knowledge and health and safety behaviours and beliefs of students based on the specific topics addressed in the educational material prior to undertaking the module and on completion of the module. All students receiving the material comprised the intervention group. A small number of student groups who did not undertake the module were assigned to a control group. The total number in this group is approximately 10% of the total sample. Given the time constraints for the roll-out of the module vis-a-vis the start up of the evaluation, and in particular the fact that schools were receiving material as the evaluation was commissioned, it was not possible to randomly assign schools to intervention or control. Post-hoc comparisons were undertaken between groups on demographic variables to establish the comparability of the two groups.
3. Process: Assessment of perceived usefulness of the structure and appropriateness of the content of the module material, perceived efficiency of the administration of the module from the perspective of students, teachers and co-ordinators forms the basis of the process evaluation. Also included are student perceptions of the acceptability of the material. Methods for exploring process included group discussions with students in selected schools, co-ordinators (see below) and questionnaires to teachers.

4. Operational aspects: The Health and Safety Authority determined a number of areas in which to pilot 'Choose Safety'. Working through Educational Centres, Co-ordinators were co-opted to assist with the piloting of 'Choose Safety'. The Kilkenny Educational Centre took the lead in this task and managed the co-option of co-ordinators and the dissemination of the course books. Co-ordinators were expected to make contact with schools in their area, and meet with interested teachers to explain the pilot, introduce the teacher to the material, and arrange for the material to be sent to schools. In this way they were the link between individual teachers and the Kilkenny Education Centre. Administrative support was provided through local Education Centres. The workability of this arrangement is assessed as part of the evaluation, based on a group interview with the co-ordinators.

## **2.2 Study Instruments**

The research team devised a student questionnaire using fixed-choice format. The questionnaire was piloted with 20 third level students. Following minor amendments, it was then issued to the individual participating students. All questionnaires were submitted for approval to representatives of the H.S.A. and subsequent alterations were made based on feedback. The final version was comprised of eight sections and was designed to assess safety knowledge, behaviours, and beliefs based on specific topics addressed in the educational material (see Appendix 1, Pre-Intervention questionnaire). The instrument also included questions on employment during/outside school term, work sectors, number of hours worked weekly and types of safety training received.

The post-intervention questionnaire contained identical questions regarding safety knowledge, behaviours, and beliefs but contained additional questions on employment in order obtain a more detailed profile, and on the level of enjoyment, perceived usefulness, acceptability etc. of the course book and DVD (see Appendix 2).

### **2.2.1 Appraisal of safety knowledge among students**

Based on educational material from the 'Choose Safety' workbook thirty safety knowledge questions were devised to measure student familiarity with and comprehension of safety matters. Questions were framed in three distinctive ways: (a) participants were asked to rate their understanding of 11 terms and concepts with five response options; (b) to explain the meaning of seven hazard label images; and (c) to mark twelve statements on safety issues as true or false.

### **2.2.2 Student Safety Behaviour**

The instrument used in this section was based on the instrument devised by Crowe (1995) to assess safe practices among college students. Participants were given five statements on safety behaviours e.g. 'I

wear a helmet when riding a bicycle' and asked to rate them on a 5 point scale where 1 represents always and 5 represents never.

### **2.2.3 Student Safety Beliefs**

Students were asked to rate a number of statements expressing general and personal safety beliefs on a 5 point scale where 1 represents strongly agree, and 5 represents strongly disagree. Eighteen of these items were developed by Crowe (ibid) to measure safety values among students. A further ten statements were included to evaluate personal safety (control) beliefs and outcome beliefs using items from subscales developed by Brosseau & Yahui Li (2005).

The data was entered into SPSS software package for analysis.

### **2.2.4 Process evaluation**

The questionnaire for teachers was devised to include ratings of the level of enjoyment, ease of use and interest level in teaching 'Choose Safety', the efficiency of the administration of the programme, suggested changes for the material by section and suggested supports for teaching health and safety (see Appendix 3). In order to explore in greater depth levels of satisfaction and acceptability of methods and materials, several open-ended questions were included. Class discussions with three groups of students also focused on level of enjoyment, perceived worth of the course and suggestions for improvement (see Appendix 4). Coordinators were asked, in a group discussion, to comment on the operational aspects of the roll-out of the pilot (see Appendix 5). Also, the numbers of workbook units delivered during the pilot was assessed.

## **2.3 Study Sample**

In total, sixty four schools, across 10 counties, were contacted and agreed to participate in the evaluation of the pilot project. Many of these schools had more than one class participating in the evaluation yielding a total of 105 class groups, of which eight were controls (176 students). Questionnaires were sent to each class group. Response rate is calculated by class group rather than by individual as schools were sent questionnaires surplus to requirements<sup>1</sup>. There was a 75% response rate from class groups at pre-intervention stage (see Table 2.1). At post-intervention, response rates were lower, with slightly less than half of the sample replying, despite a recall in the third week of May.

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<sup>1</sup> Exact number of students per class was not always available to coordinators at the time of the roll-out of the pilot.

**Table 2.1: Sample and Response Rates for Class Groups**

| Class Group Participation | Sample | Response Rates   |                  |                   |                         |
|---------------------------|--------|------------------|------------------|-------------------|-------------------------|
|                           |        | Pre-Intervention | Pre-Intervention | Post Intervention | Post Intervention       |
| Clare                     | 14     | 11               | 79%              | 5                 | 45% of pre-intervention |
| Galway                    | 13     | 8                | 62%              | 3                 | 38% of pre-intervention |
| Mayo/Sligo                | 14     | 9                | 64%              | 4                 | 44% of pre-intervention |
| Wexford, Carlow, Wicklow  | 27     | 20               | 74%              | 8                 | 40% of pre-intervention |
| Waterford/Tipperary       | 29     | 23               | 79%              | 9                 | 39% of pre-intervention |
| Control                   | 8      | 8                | 100%             | 7                 | 88% of pre-intervention |
| <b>Totals</b>             | 105    | 79               | 75%              | 36                | 46% of pre-intervention |

Schools were selected for participation in the group interviews assessing process aspects of the pilot. The few schools that finished in March were selected for this purpose. It was possible to set up group interviews with three such schools.

Fifty six teachers were contacted post-intervention to complete questionnaires. Thirty seven responded, although only 29 completed questionnaires, yielding a true response rate of 52%. Five (of six) coordinators attended the group interview.

### Chapter Summary

An experimental mixed methodologies design was used to evaluate the ‘Choose Safety’ programme. The four major objectives were to provide a profile of employment of the students, to assess the programme impact, to assess the process and to assess the operational aspects of the programme. Both qualitative and quantitative techniques were employed.

A questionnaire survey instrument was developed to assess the health and safety knowledge, behaviours and beliefs of the students. This was distributed both pre and post intervention. It was also used to develop the employment profile.

The process aspects were evaluated by use of the survey questionnaire with the students and by holding three student discussion sessions in relation to the ‘Choose Safety’ programme. Teachers submitted an evaluation questionnaire also, with their perspective on the course, while the coordinators attended a group discussion session to detail their feedback on the operational issues involved in the programme.



## *Results*

### **3.1 Full Sample: Demographic Information**

Taking the group as a whole at pre-intervention stage, as can be seen from Table 3.1, the majority of students are either 15 or 16 years old (87%) and the sample is well balanced in respect of gender. Transition Year (TY) students are strongly represented (65%) with the vast majority between 15 and 16 years. Students in the 17-19 years old age bracket are divided equally between Leaving Certificate Vocational Programme (LCVP) and Leaving Certificate Applied (LCA). 'Other' applies to class groups who are not in the three main categories.

**Table 3.1: Demographic Information: Age, Gender and Class group**

|   |      |     |
|---|------|-----|
| <b>Age</b>                                      |      |     |
| 15 years  | 672  | 46% |
| 16 years  | 598  | 41% |
| 17-19 years                                     | 177  | 12% |
| <b>Total</b>                                    | 1453 | 100 |
| <b>Gender</b>                                   |      |     |
| Male  | 650  | 45% |
| Female  | 803  | 55% |
| <b>Total</b>                                    | 1453 | 100 |
| <b>School Year</b>                              |      |     |
| Transition year (TY)                            | 939  | 65% |
| Leaving certificate vocational programme (LCVP) | 230  | 16% |
| Leaving certificate applied (LCA)               | 236  | 16% |
| <b>Other</b>                                    | 48   | 3%  |

A letter was sent to each teacher requesting that wherever possible students should complete the questionnaires before embarking on the Choose Safety module. Nearly three quarters of the students (73%) responded that they had not started the programme when they filled in the questionnaire and a further 15% did not answer implying that it was not an issue for them. Of the 12% who had commenced the module 54% stated that they completed the first unit while 45% did not know what they had covered. A series of Chi square analyses (see Appendix 6) were conducted for each item comparing responses of those who had commenced the Choose Safety module with those who had not.

These analyses revealed that of 69 items, significant differences emerged in only 11 cases (16% of items) and on this basis it was decided to leave the 12% of ‘early starters’ within the main analyses.

### 3.2 Intervention Group versus Control Group: Demographic Information

As the students were not randomly allocated to control and intervention groups, it was deemed necessary to conduct post-hoc comparisons to establish the degree of similarity or difference between the groups.

There are some important differences between the two groups. For gender, at pre-intervention, while the intervention group was fairly evenly balanced, in contrast two thirds of the control group were female and one third male at pre-intervention, and this difference is significant ( $X^2= 8.22$ ,  $df = 1$ ,  $p < .01$ ). At post intervention, the two groups were, however, similarly constituted and there was no significant difference in respect to gender ( $X^2= .41$ ,  $df = 1$ , n.s.). For age, while 27% of the control group was over 17 at pre-intervention, this contrasted significantly with the intervention group where only 10% of the students were in the 17-19 year old bracket and 90% were aged between 15 and 16 years ( $X^2= 54.35$ ,  $df = 1$ ,  $p < .01$ ). By post intervention, the control group was more evenly split between the two age categories although the intervention group remained significantly different in its bias in favour of younger ages ( $X^2 = 70.88$ ,  $df = 1$ ,  $p < .01$ ) (see Table 3.2).

**Table 3.2: Intervention and Control Groups by Gender and Age**

| Gender and Age | Control Group    |                   | Intervention Group |                   |
|----------------|------------------|-------------------|--------------------|-------------------|
|                | Pre-intervention | Post intervention | Pre-intervention   | Post intervention |
| Male           | 35%              | 46%               | 46%                | 42%               |
| Female         | 65%              | 54%               | 54%                | 58%               |
| Age            |                  |                   |                    |                   |
| 15 -16 years   | 70%              | 56%               | 90%                | 90%               |
| 17-19 years    | 27%              | 44%               | 10%                | 10%               |
| Missing        | 1%               |                   |                    |                   |

The disparity in age, in turn, drives disparity in class groups. At pre-intervention, almost a third of the control group were in TY in comparison to over two thirds (69%) of the main group, and there are no LCA students in the control group. At post intervention, the majority of control group students are in LCVA (see Table 3.3). One quarter of control students are categorised as 'other'. The intervention group are predominantly TY students at both time points. These differences must be borne in mind when

interpreting main effects. Given the small numbers in the LCVA and LCA programmes these cells are collapsed for all subsequent analyses.

**Table 3.3: School Year by Groups**

| Class Group                              | Control Group    |                   | Intervention Group |                   |
|--|------------------|-------------------|--------------------|-------------------|
|  | Pre-intervention | Post-intervention | Pre-intervention   | Post-intervention |
| Transition year                          | 31%              | 13%               | 69%                | 82%               |
| Leaving certificate vocational programme | 54%              | 56%               | 11%                | 4%                |
| Leaving certificate applied              | 0                | 3%                | 18%                | 10%               |
| Other                                    | 15%              | 26%               | 2%                 | 4%                |

### 3.3 Profile of Student Engagement in Employment and Access to Safety Training

Participants answered a number of questions on issues of employment. At pre-intervention, 44% reported working in paid employment with just over half working regular hours and just under half working irregular hours. Predictably, the older the student the more likely s/he is to be working, with more than half (56%) of 17-19 year olds in employment, 45% of 16 year olds and 39% of 15 year olds (see Table 3.4). Forty eight percent of female students work outside of school hours compared to 38% of male students.

**Table 3.4: Paid Employment outside School Hours**

| Paid employment outside of school hours | Age |     |       | Total |
|---|-----|-----|-------|-------|
|   | 15  | 16  | 17-19 |       |
| Yes                                     | 39% | 46% | 56%   | 44%   |
| No                                      | 61% | 55% | 44%   | 56%   |
| Total                                   | 100 | 100 | 100   | 100   |
| N                                       | 658 | 583 | 174   | 1415  |

Significantly, a quarter of all the students whom, at pre-intervention, reported being employed on a regular basis during school term reported working in excess of eleven hours per week (see Table 3.5). Almost half work more than 11 eleven hours per week outside of term.

**Table 3.5: Those Employed: Hours Worked in and out of Term  
(Pre-Intervention)**

| Hours worked...                     | ...in term | ...out of term |
|-------------------------------------|------------|----------------|
| 1-3hrs                              | 12%        | 7%             |
| 3-5hrs                              | 19%        | 10%            |
| 5-7hrs                              | 13%        | 12%            |
| 7-9hrs                              | 17%        | 10%            |
| 9-11hrs                             | 14%        | 14%            |
| other                               | 25%        | 46%            |
| <b>Total (N, % of total sample)</b> | 648 (44%)  | 648 (44%)      |

Due to the unexpectedly large numbers of students who are employed for long hours, the nature of this work was explored in more detail at post intervention to obtain a more accurate picture of their working week (see Table 3.6). As can be seen, 43% consistently reported being involved in paid employment, with the majority working 15 hours or less during term, but almost one quarter working more than 25 hours a week outside of term.

**Table 3.6: Those Employed: Hours worked in and out of Term (Post Intervention)**

| Hours worked...                     | ...in term | ...out of term |
|-------------------------------------|------------|----------------|
| 1-5 hrs                             | 23%        | 11%            |
| 6-10 hrs                            | 34%        | 19%            |
| 11-15 hrs                           | 23%        | 13%            |
| 16-20 hrs                           | 12%        | 18%            |
| 21-25 hrs                           | 4%         | 16%            |
| more                                | 1%         | 23%            |
| <b>Total (N, % of total sample)</b> | 257 (43%)  | 257 (43%)      |

The survey included questions about the types of job held by students who are in employment. At pre-intervention, babysitting/eldercare work and hotel/restaurant/bar sector are the most likely sectors in which students find employment. There are predictable gender differences in the types of work students are engaged in. Males mostly work in an 'other' sector (49%), followed by the hotel/restaurant/bar sector (15%). Females are five times more likely to work in babysitting/eldercare area (35%) than their male counterparts, followed by the hotel/restaurant/bar sector (26%) (See Table 3.7).

**Table 3.7: Those Employed: Sector of Employment (Pre-intervention)**

|                                 | <b>Male</b> | <b>Female</b> | <b>Total</b> |
|---------------------------------|-------------|---------------|--------------|
| <b>Retail / delivery</b>        | 12%         | 16%           | 14%          |
| <b>Leisure / entertainment</b>  | 6%          | 4%            | 4%           |
| <b>Hotel / restaurant / bar</b> | 15%         | 26%           | 21%          |
| <b>Babysitting / eldercare</b>  | 7%          | 35%           | 22%          |
| <b>Farming / gardening</b>      | 12%         | 2%            | 6%           |
| <b>Other</b>                    | 49%         | 16%           | 31%          |

However, given that the data from the pre-intervention survey indicated that nearly one third of all the students in employment worked in sectors other than those specified in the questionnaire; this issue was examined in more detail in the post intervention data collection exercise. The hospitality sector remains popular, although at post-intervention more students were working in retail. The inclusion of others sectors did not illuminate the situation greatly, showing small proportions of male students working in construction and motor industries (see Table 3.8).

**Table 3.8: Those Employed: Sector of Employment (Post Intervention)**

|                                 | <b>Male</b> | <b>Female</b> | <b>Total</b> |
|---------------------------------|-------------|---------------|--------------|
| <b>Retail / delivery</b>        | 26%         | 39%           | 34%          |
| <b>Leisure / entertainment</b>  | 6%          | 4%            | 5%           |
| <b>Hotel / restaurant / bar</b> | 20%         | 28%           | 25%          |
| <b>Babysitting / eldercare</b>  | 4%          | 18%           | 13%          |
| <b>Farming / gardening</b>      | 10%         | 2%            | 5%           |
| <b>Manufacturing</b>            | 2%          | .5%           | 1%           |
| <b>Construction</b>             | 10%         | 0%            | 4%           |
| <b>Family Business</b>          | 3%          | 3%            | 3%           |
| <b>Motor/Garage</b>             | 10%         | 0%            | 4%           |
| <b>Office</b>                   | 2%          | .5%           | 1%           |
| <b>Other</b>                    | 9%          | 6%            | 7%           |

### 3.3.1 Safety Training

Those employed (full sample) were asked whether or not they had received any safety training from their current employer. One third of all employed students indicated they had. The older the student, the more likely she/he is to have had some training. The Retail/Delivery and Hotel/Bar/Restaurant sectors are the most disposed to providing safety training for their staff than the other named areas but nevertheless, in all sectors less than half of students received no training.

Those who had received safety training were requested to state from the following list the items they had covered:

1. Safety statement
2. Workplace hazards
3. Risk assessment
4. Emergency procedures
5. Protective clothing and equipment
6. Procedures and policies

Students were also asked if they had completed the FÁS Safe Pass Health and Safety Awareness Training Programme. Responses show the majority who had received safety training had covered all workplace hazards (see Table 3.9), and approximately half have covered the other topics. A small percentage has undertaken the FAS Safe Pass.

**Table 3.9: Those Employed and Safety Trained (Pre-Intervention)**

| Element                         |     |
|---------------------------------|-----|
| Safety statement                | 54% |
| Workplace hazards               | 77% |
| Risk assessment                 | 43% |
| Emergency procedures            | 55% |
| Protective clothing & equipment | 56% |
| Procedures & policies           | 50% |
| FAS Safe Pass                   | 5%  |

### 3.4 Appraisal of Student Safety Knowledge: Main Results

Thirty safety knowledge items were devised to measure student familiarity with and comprehension of safety matters, including ratings of understanding of eleven terms and concepts and the meaning of seven hazard label images and twelve true or false statements on safety issues. For each item, the difference between the responses for the control group at pre- and post intervention and the difference

between the intervention group at both times was computed, using paired-samples t tests<sup>2</sup>. The difference between the two groups was then explored using a two-way ANOVA.

The results for the 11 statements can be seen in Table 3.10. Significant interaction effects (i.e. differences over time plus differences between groups) are printed in bold. As can be seen, there were significant pre-post changes in knowledge in 10 of 11 items, 8 of which were at the more stringent cut off point ( $p < .01$ ) in the intervention group compared to the control group<sup>3</sup>.

For the seven hazard labels, the level of measurement here produced only categorical data; therefore Chi squared tests were applied. For these items, change was less reliable. While both groups were similar regarding the labels for toxic, environmental danger at pre-intervention and there was a significant difference between the groups at post intervention, this may have been due to deflated scores in the control group at post intervention (see Table 3.11). For the corrosive, harmful and oxidising labels, the groups were significantly different at both pre- and post intervention, yet the intervention group did display better scores at post intervention. Pre-intervention knowledge of the explosive and flammable labels was very high at pre-intervention, not giving much room for improvement.

For the knowledge statements, as with the labels, the level of measurement produced only categorical data and Chi squared tests were applied (see Table 3.12). For these items, change was evident. For six of the 12 items, results were positive with no difference between the groups pre-intervention but a significant increase in knowledge for the intervention group, post intervention. For five other items there was no difference between the groups at either time point, although levels of knowledge were high from the outset.

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<sup>2</sup> Effects sizes were also computed, using the following scale: 0.01 = small, 0.06 = moderate, 0.14 = large

<sup>3</sup> Statistical significance is regarded as being achieved only at the level of  $p < .01$

**Table 3.10: Control vs Intervention Groups, Pre vs Post intervention Comparison, Knowledge Concepts**

|   | <b>Control</b>       |   | <b>Intervention</b>  |   | <b>Control vs Intervention</b>             |
|---|----------------------|---|----------------------|---|--|
| <b>Item</b>   | <b>Mean Pre/Post</b> | <b>T value/<br/>significance/<br/>effect size</b> | <b>Mean Pre/Post</b> | <b>T value/<br/>significance/<br/>effect size</b> | <b>ANOVA (F Value)and<br/>significance</b> |
| <b>The meaning of the word ‘hazard</b>                        | 4.56/4.59            | -.38/n.s  | 4.20/4.57            | -8.12/sig. /.12                                   | <b>8.9/sig.</b>                            |
| <b>The meaning of the term ‘personal risk’</b>                | 4.53/4.53            | .10/n.s   | 4.07/4.29            | -4.60/sig. /.04                                   | 3.70/.05                                   |
| <b>The meaning of the term ‘manual handling’</b>              | 3.35/3.81            | .00/n.s.  | 3.14/4.19            | -15.7/sig. /.34                                   | <b>11.34/sig.</b>                          |
| <b>The meaning of the word ‘ergonomics’</b>                   | 1.58/1.85            | -2.06/.04/.05                                     | 1.85/2.87            | -15.22/sig. /.32                                  | <b>20.96/sig.</b>                          |
| <b>The meaning of the term ‘safety data sheets’</b>           | 2.54/3.26            | -4.04/sig. /.16                                   | 2.26/3.29            | -15.29/sig. /.32                                  | 3.18/n.s                                   |
| <b>The meaning of ‘personal protective equipment’</b>         | 4.41/4.53            | -1.01/n.s   | 3.91/4.46            | -11.25/sig. /.21                                  | <b>13.37/sig.</b>                          |
| <b>How to measure risk levels involved in tasks</b>           | 3.10/3.37            | -1.43/n.s.  | 2.58/3.83            | -19.02/sig. /.43                                  | <b>30.88/sig.</b>                          |
| <b>What a safety statement is</b>                             | 3.29/3.66            | -2.30/.02/.06                                     | 2.84/3.75            | -13.30/sig. /.27                                  | <b>9.50/sig.</b>                           |
| <b>The role of the Health and Safety Authority in Ireland</b> | 3.48/3.82            | -2.05/.04/.04                                     | 3.12/3.91            | -11.56/sig. /.22                                  | <b>6.93/sig.</b>                           |
| <b>The role of the safety officer within the workplace</b>    | 3.89/4.10            | -1.39/n.s.  | 3.38/4.16            | -13.07/sig. /.26                                  | 13.72/.02                                  |
| <b>The meaning of safety representative</b>                   | 3.49/3.75            | -1.55/n.s.  | 2.98/3.89            | -13.58/sig. /.28                                  | <b>14.61/sig.</b>                          |



**Table 3.11: Control vs Intervention Groups at Pre and Post Intervention, Knowledge of Labels**

| Seven labels | Pre-intervention                       |                                    | Post Intervention                      |                                    |
|--------------|--|------------------------------------|--|------------------------------------|
|              | Control vs Intervention ans. correctly | X <sup>2</sup> value/ significance | Control vs Intervention ans. correctly | X <sup>2</sup> value/ significance |
| Toxic        | 73%/72%                                | .1/n.s                             | 54%/82%                                | <b>33.4/sig.</b>                   |
| Environment  | 53%/54%                                | .03/n.s.                           | 64%/77%                                | <b>6.21/sig.</b>                   |
| Corrosive    | 56%/68%                                | <b>8.01/sig.</b>                   | 57%/85%                                | <b>37.90/sig.</b>                  |
| Explosive    | 97%/96%                                | .04/n.s.                           | 99%/98%                                | sig. /n.s.                         |
| Harmful      | 12%/43%                                | <b>46.39/sig.</b>                  | 25%/64%                                | <b>35.07/sig.</b>                  |
| Oxidising    | 18%/39%                                | <b>12.82/sig.</b>                  | 19%/74%                                | <b>65.07/sig.</b>                  |
| Flammable    | 98%/97%                                | sig. /n.s.                         | 98%/99%                                | 2.16/n.s.                          |

**Table 3.12: Control vs Intervention Groups at Pre and Post Intervention, Knowledge Statements**

| Statements  | Pre-intervention                       |                                    | Post Intervention                      |                                    |
|---|--|------------------------------------|--|------------------------------------|
|   | Control vs Intervention ans. correctly | X <sup>2</sup> value/ Significance | Control vs Intervention ans. correctly | X <sup>2</sup> value/ Significance |
| Most workplace accidents happen at night  | 87%/55%                                | 1.63/n.s.                          | 83%/86%                                | .51/n.s.                           |
| Young workers... under twenty ...injured more often than other age groups       | 22%/35%                                | <b>10.41/sig.</b>                  | 19%/58%                                | <b>45.58/sig.</b>                  |
| Falling, slipping and tripping ...least common type accident                    | 79%/82%                                | .69/n.s.                           | 85%/85%                                | .00/n.s.                           |
| Back damage ...most common injury in the workplace                              | 23%/19%                                | 1.68/n.s.                          | 77%/92%                                | <b>18.83/sig.</b>                  |
| Legally employers do not have to provide a safe working environment for workers | 97%/91%                                | <b>7.27/sig.</b>                   | 95%/95%                                | .00/n.s.                           |
| Manual handling causes more than one-third of accidents ....                    | 83%/83%                                | .00/n.s.                           | 77%/90%                                | <b>10.23/sig.</b>                  |
| Most fires occur at home  | 46%/51%                                | 1.23/n.s.                          | 49%/63%                                | <b>5.80/sig.</b>                   |
| Male workers get injured more often than female workers                         | 51%/58%                                | 2.45/n.s.                          | 48%/72%                                | <b>19.19/sig.</b>                  |
| Bullying in the workplace is a health and safety issue                          | 77%/76%                                | .02/n.s.                           | 88%/92%                                | .83/n.s.                           |
| Employers can do nothing to reduce stress at work                               | 91%/89%                                | .28/n.s                            | 92%/93%                                | sig. /n.s.                         |
| In accidents involving fire most deaths are from burns                          | 74%/67%                                | 2.67/n.s.                          | 71%/75%                                | .45/n.s.                           |
| Over 1 mill. work days are lost each year ...workplace injuries/illnesses       | 65%/70%                                | 1.79/n.s.                          | 58%/82%                                | <b>22.58/sig.</b>                  |

### 3.5 Appraisal of Student Safety Knowledge: Comparison of Class Groups

For each of the three types of knowledge evaluation, comparisons were undertaken for those who were in the transition year and those in other class groups, at post intervention. All other class groups were collapsed due to small numbers in cells, which would prohibit analysis. For each item, the difference between the responses for the each group at pre- and post intervention was computed, using paired-samples t tests<sup>4</sup>. The difference between transition and all other groups was then explored using a two-way mixed factor ANOVA (see Table 3.13). Results indicate that there were no significant interactions between the type of class group and the intervention, with the exception of the 'hazard' item, for which other groups performed better than transition year students.

For the seven hazard labels and the 12 knowledge statements, again, only Chi squared tests were applied. For the labels, the groups displayed similar levels of knowledge at both pre and post intervention time points (see Table 3.14). The others displayed superior knowledge (but not significant to .01) of the 'environment' and 'harmful' labels at post intervention while at pre-intervention the transition year students were more familiar with the 'corrosive' label. For the knowledge statements, as can be seen from Table 3.15, there was more variation between the groups and across time. For half of the items the groups did not differ significantly from each other before or after the 'Choose Safety' intervention. However for three further items, the transition year students had greater knowledge than the other groups at each time, and for two items at pre-intervention.

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<sup>4</sup> Effects sizes were also computed, using the following scale: 0.01 = small, 0.06 = moderate, 0.14 = large

**Table 3.13: Transition vs Other Class Groups, Pre vs Post intervention Comparison, Knowledge Concepts**

|  | <b>Transition</b>    |   | <b>Other class groups</b> |   | <b>Transition vs Other</b>             |
|--|----------------------|---|---------------------------|---|--|
| <b>Item</b>  | <b>Mean Pre/Post</b> | <b>T value/ significance/ effect size</b> | <b>Mean Pre/Post</b>      | <b>T value/ significance/ effect size</b> | <b>ANOVA (F Value)and significance</b> |
| <b>The meaning of the word ‘hazard</b>                 | 4.26/4.57            | -6.43/sig./09                             | 3.92/4.59                 | -5.39/sig./26                             | <b>8.2/sig.</b>                        |
| <b>The meaning of the term ‘personal risk’</b>         | 4.12/4.32            | 3.80/sig./03                              | 3.77/4.18                 | -2.60/sig./08                             | -2.6/n.s.                              |
| <b>The meaning of the term ‘manual handling’</b>       | 3.16/4.20            | -15.00/sig./35                            | 3.30/4.15                 | -5.46/sig./27                             | .16/n.s.                               |
| <b>The meaning of the word ‘ergonomics’</b>            | 1.89/2.90            | -13.81/sig./32                            | 1.62/2.73                 | -6.38/sig./34                             | .30/n.s.                               |
| <b>The meaning of the term ‘safety data sheets’</b>    | 2.21/3.26            | -14.22/sig./33                            | 2.48/3.41                 | -5.62/sig./28                             | .49/n.s.                               |
| <b>The meaning of ‘personal protective equipment’</b>  | 3.91/4.57            | -10.48/sig./21                            | 3.94/4.51                 | -4.10/sig./17                             | .33/n.s.                               |
| <b>How to measure risk levels involved in tasks</b>    | 2.57/3.83            | -17.87/sig./44                            | 2.64/3.81                 | -6.17/sig./36                             | .60/n.s.                               |
| <b>What a safety statement is</b>                      | 2.79/3.70            | -12.49/sig./28                            | 3.26/4.07                 | -4.68/sig./22                             | .41/n.s.                               |
| <b>The role of the Health and Safety Authority</b>     | 3.09/3.91            | -10.82/sig./23                            | 3.15/3.87                 | -4.14/sig./18                             | .24/n.s.                               |
| <b>The role of safety officer within the workplace</b> | 3.34/4.14            | -12.36/sig./27                            | 3.55/4.21                 | -4.40/sig./19                             | .69/n.s.                               |
| <b>The meaning of safety representative</b>            | 2.95/3.88            | -12.99/sig./29                            | 3.12/3.95                 | -4.42/sig./20                             | .29/n.s.                               |

**Table 3.14: Transition vs Other Groups at Pre and Post Intervention, Knowledge of Labels**

| Seven labels | Pre-intervention              |                                    | Post Intervention              |                                    |
|--------------|-------------------------------|------------------------------------|--------------------------------|------------------------------------|
|              | Trans vs Other ans. correctly | X <sup>2</sup> value/ significance | Trans vs Others ans. correctly | X <sup>2</sup> value/ significance |
| Toxic        | 71%/73%                       | .12/n.s.                           | 81%/85%                        | .40/n.s.                           |
| Environment  | 53%/55%                       | .22/n.s.                           | 77%/88%                        | 3.93/.04                           |
| Corrosive    | 72%/59%                       | <b>16.99/sig.</b>                  | 87%/80%                        | 1.65/n.s.                          |
| Explosive    | 96%/97%                       | .41/n.s.                           | 98%/99%                        | .00/n.s.                           |
| Harmful      | 43%/45%                       | .25/n.s.                           | 61%/76%                        | 4.41/.03                           |
| Oxidising    | 37%/45%                       | 3.27/n.s.                          | 74%/78%                        | .31/n.s.                           |
| Flammable    | 98%/98%                       | .18/n.s.                           | 99%/100%                       | .05/n.s.                           |

**Table 3.15: Transition vs Other Groups at Pre and Post Intervention, Knowledge Statements**

| Statements  | Pre-intervention              |                                     | Post Intervention             |                                     |
|---|-------------------------------|-------------------------------------|-------------------------------|-------------------------------------|
|   | Trans vs Other ans. correctly | X <sup>2</sup> value/ Sig-nificance | Trans vs Other ans. correctly | X <sup>2</sup> value/ Sig-nificance |
| Most workplace accidents happen at night  | 15%/15%                       | .00/n.s.                            | 14%/13%                       | .00/n.s.                            |
| Young workers... under twenty ...injured more often than other age groups       | 33%/39%                       | 4.53/.03                            | 58%/57%                       | .02/n.s.                            |
| Falling, slipping and tripping ...least common type accident                    | 85%/76%                       | <b>11.57/sig.</b>                   | 86%/77%                       | 3.98/.04                            |
| Back damage ...most common injury in the workplace                              | 80%/83%                       | 1.55/n.s.                           | 92%/93%                       | .00/n.s.                            |
| Legally employers do not have to provide a safe working environment for workers | 92%/87%                       | <b>6.17/sig.</b>                    | 94%/93%                       | 1.28/n.s.                           |
| Manual handling causes more than one-third of accidents ....                    | 84%/80%                       | 3.50/n.s.                           | 90%/86%                       | .97/n.s.                            |
| Most fires occur at home  | 52%/50%                       | .39/n.s.                            | 63%/67%                       | .31/n.s.                            |
| Male workers get injured more often than female workers                         | 56%/60%                       | 1.86/n.s.                           | 72%/70%                       | .02/n.s.                            |
| Bullying in the workplace is a health and safety issue                          | 80%/67%                       | <b>22.13/sig.</b>                   | 94%/81%                       | <b>15.00/sig.</b>                   |
| Employers can do nothing to reduce stress at work                               | 93%/81%                       | <b>36.50/sig.</b>                   | 96%/81%                       | <b>24.24/sig.</b>                   |
| In accidents involving fire most deaths are from burns                          | 71%/58%                       | <b>17.76/sig.</b>                   | 76%/66%                       | 3.33/n.s.                           |
| Over 1 mill. work days are lost each year ...workplace injuries/illnesses       | 71%/68%                       | 1.36/n.s.                           | 82%/78%                       | .50/n.s.                            |

### 3.6 Appraisal of Student Safety Behaviour

Students were given two questionnaire subscales which measured personal safety behaviour and general safety behaviour. For each item they had to state the frequency with which they complied with the behaviour i.e. on a scale from always to never. Table 3.16 shows the results of statistical analyses used to determine change over time in both groups and between the intervention and control groups. For each item, the difference between the responses for the control group at pre- and post intervention and the difference between the intervention group at both times was computed, using paired-samples t tests<sup>5</sup>. The difference between the two groups was then explored using a two-way mixed factor ANOVA.

The results for the five personal safety behaviour statements can be seen in Table 3.16. There was only one significant interaction effect (i.e. differences over time plus differences between groups) which is printed in bold. For the statement on wearing a helmet when bike riding, the intervention group were more likely to say they seldom wore a helmet than never wore one at post intervention stage. There was no change for the control group on this question. However, helmet wearing in general was not adhered to by either the intervention or control group at any stage. There were no significant interaction effects observed for any of the six general safety behaviour items, as can be seen in Table 3.17.

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<sup>5</sup> Effects sizes were also computed, using the following scale: 0.01 = small, 0.06 = moderate, 0.14 = large

**Table 3.16: Control vs Intervention Groups, Pre vs Post intervention  
Comparison – Personal Safety Behaviour**

| Item  | Control       |                                  | Intervention  |                                  | Control vs Intervention          |
|---|---------------|----------------------------------|---------------|----------------------------------|----------------------------------|
|   | Mean Pre/Post | T value/significance/effect size | Mean Pre/Post | T value/significance/effect size | ANOVA (F Value) and significance |
| I wear a seat belt when I am a passenger in a car   | 1.23/1.10     | 2.096/.03/.05                    | 1.18/1.16     | .588/n.s.                        | 5.05/n.s                         |
| I wear protective equipment when running a lawn mower i.e. shoes, ear plugs, safety glasses | 4.43/3.85     | 4.037/.00/.16                    | 4.06/3.72     | 4.602/.00/0.4                    | 1.66/n.s                         |
| I wear a helmet when riding a bicycle   | 4.17/4.18     | -1.07/n.s.                       | 4.41/4.02     | 6.331/.00/.08                    | <b>7.08/sig</b>                  |
| I wear safety glasses when performing jobs that could lead to eye injuries                  | 2.61/2.45     | 1.056/n.s.                       | 2.58/2.32     | 3.872/.00/0.3                    | .362/n.s                         |
| I regularly cycle after dark without reflective clothing                                    | 3.90/4.06     | -.995/n.s.                       | 4.14/4.18     | -.551/n.s.                       | .503/n.s                         |

**Table 3.17: Control vs Intervention Groups, Pre vs Post intervention  
Comparison - General Safety Behaviour**

| Item   | Control       |                                  | Intervention  |                                  | Control vs Intervention         |
|--|---------------|----------------------------------|---------------|----------------------------------|---------------------------------|
|  | Mean Pre/Post | T value/significance/effect size | Mean Pre/Post | T value/significance/effect size | ANOVA (F Value)and significance |
| It is ok to cut corners in order to get the job done quickly                               | 4.03/4.01     | .249/n.s.                        | 3.83/4.02     | -3.872 /.00/.03                  | 3.117/n.s.                      |
| Protective clothing is not necessary if it slows down the task                             | 4.31/4.38     | -.807/n.s.                       | 4.18/4.26     | -1.589/n.s.                      | .001/n.s.                       |
| It is ok to drive above the speed limit if you are in a hurry                              | 4.36/4.38     | -.238/n.s.                       | 4.31/4.31     | -.081/n.s.                       | .021/n.s.                       |
| Waste and emissions from industry are ok as long as they don't harm the majority of people | 4.40/4.54     | -1.555/n.s.                      | 4.22/4.31     | -1.853/n.s.                      | .216/n.s.                       |
| It is ok to disregard safety procedures if everyone else is doing so                       | 4.48/4.50     | -.293/n.s.                       | 4.37/4.39     | -.337/n.s.                       | .006/n.s.                       |
| It is ok for a boss to shout at workers in order to get the job done quickly               | 3.74/3.98     | -1.782/n.s.                      | 3.73/3.88     | -2.708/.00/.01                   | .328/n.s.                       |

### 3.7 Appraisal of Student Safety Behaviour: Comparison of Class Groups

A comparison of Transition year students and all the other student groups was also conducted on the items measuring safety behaviour. For each item, the difference between the responses for each group at pre- and post intervention was computed, using paired-samples t tests<sup>6</sup>. The difference between transition and all other groups was then explored using a two-way mixed factor ANOVA (see Table 3.18 and Table 3.19). Results indicate that there were two significant interaction effects.

**Table: 3.18: Transition vs Other Class Groups, Pre vs Post intervention Comparison – Personal Safety Behaviour**

|   | Transition Year |                                    | Other classes |                                    | Transition vs other             |
|---|-----------------|------------------------------------|---------------|------------------------------------|---------------------------------|
|   | Mean Pre/Post   | T value/ significance/ effect size | Mean Pre/Post | T value/ significance/ effect size | ANOVA (F Value)and significance |
| I wear a seat belt when I am a passenger in a car   | 1.44/1.44       | .000/n.s.                          | 1.34/1.26     | .818/n.s.                          | 1.502/n.s.                      |
| I wear protective equipment when running a lawn mower i.e. shoes, ear plugs, safety glasses | 4.02/3.65       | <b>4.537/sig/.05</b>               | 4.26/4.06     | 1.116/n.s.                         | .709/n.s.                       |
| I wear a helmet when riding a bicycle   | 4.36/3.98       | <b>5.624/sig/.07</b>               | 4.64/4.23     | 2.942/.04/.10                      | .052/n.s.                       |
| I wear safety glasses when performing jobs that could lead to eye injuries                  | 2.57/2.33       | <b>3.233/sig/.03</b>               | 2.62/2.25     | 2.225/.02/.06                      | .447/n.s.                       |
| I regularly cycle after dark without reflective clothing                                    | 4.183/4.18      | .034/n.s.                          | 4.91/4.15     | -1.283/n.s.                        | 1.725/n.s.                      |

<sup>6</sup> Effects sizes were also computed, using the following scale: 0.01 = small, 0.06 = moderate, 0.14 = large

**Table: 3.19: Transition vs Other Class Groups, Pre vs Post intervention Comparison –  
General Safety Behaviour**

| Item   | Transition year |                                    | Other classes |                                    | Transition vs Other             |
|--|-----------------|------------------------------------|---------------|------------------------------------|---------------------------------|
|  | Mean Pre/Post   | T value/ significance/ effect size | Mean Pre/Post | T value/ significance/ effect size | ANOVA (F Value)and significance |
| It is ok to cut corners in order to get the job done quickly                               | 3.85/3.98       | <b>-2.392/sig/.01</b>              | 3.76/4.26     | <b>-4.036/sig/.16</b>              | <b>8.292/sig</b>                |
| Protective clothing is not necessary if it slows down the task                             | 4.21/4.27       | -1.127/n.s.                        | 4.01/4.20     | -1.189/n.s.                        | .989/n.s.                       |
| It is ok to drive above the speed limit if you are in a hurry                              | 4.32/4.26       | 1.129/n.s.                         | 4.22/4.54     | -2.604/n.s.                        | <b>8.503/sig</b>                |
| Waste and emissions from industry are ok as long as they don't harm the majority of people | 4.26/4.32       | -1.127/n.s.                        | 4.02/4.25     | -2.077/.04/.05                     | 1.831/n.s.                      |
| It is ok to disregard safety procedures if everyone else is doing so                       | 4.39/4.42       | .645/n.s.                          | 4.24/4.19     | .463/n.s.                          | .443/n.s.                       |
| It is ok for a boss to shout at workers in order to get the job done quickly               | 3.77/3.93       | <b>-2.537/sig/.02</b>              | 3.53/3.68     | -.967/n.s.                         | .010/n.s.                       |

### 3.8 Appraisal of Student Safety Beliefs

Students had to respond to seventeen questions designed to explore beliefs with regard to occupational health and safety. Table 3.20 shows the results for these items. It can be seen that only one significant interaction effect occurred between the groups over time. The repeated measures t-tests reveal that the control group were more likely to respond more favourably to the item “There is a relationship between human behaviour and accident rates” on time two than on time one.



**Table 3.20: Control vs Intervention Groups, Pre vs Post intervention Comparison – Safety Beliefs**

| Item   | Control       |                                    | Intervention  |                                    | Control vs Intervention         |
|--|---------------|------------------------------------|---------------|------------------------------------|---------------------------------|
|  | Mean Pre/Post | T value/ significance/ effect size | Mean Pre/Post | T value/ significance/ effect size | ANOVA (F Value)and significance |
| I am a safety conscious person   | 2.43/2.26     | 1.913/n.s.                         | 2.34/2.26     | 1.816/n.s.                         | .918/n.s.                       |
| My attitudes to safety keep me safe from accidents   | 2.35/2.28     | .592 /n.s.                         | 2.35/2.32     | <b>2.680/sig./01</b>               | .194/n.s.                       |
| Safety is primarily a human problem  | 2.65/2.41     | 2.088/.04/.05                      | 2.48/2.28     | <b>3.854/sig./03</b>               | .102/n.s.                       |
| To reduce accidents we have to change people’s safety behaviour  | 1.75/1.64     | 1.342/n.s.                         | 1.79/1.72     | 1.644/n.s.                         | .227/n.s.                       |
| Parents can have a direct effect on the behaviour of their children as it relates to safety practices. | 1.95/1.77     | 1.582/n.s.                         | 1.81/1.84     | -.650/>n.s.                        | 3.618/n.s.                      |
| Everyone should receive safety-related instructions before participating in a new activity.            | 1.87/1.83     | .420/n.s.                          | 1.79/1.76     | .741/n.s.                          | .015/n.s.                       |
| Accidents are, for the most part, an “Act of God”.   | 3.92/3.85     | .709/n.s.                          | 3.76/3.71     | .827/n.s.                          | .056/n.s.                       |
| It is simply a matter of bad luck when someone gets injured.   | 3.80/3.91     | -1.032/n.s.                        | 3.67/3.71     | -.716/n.s.                         | .295/n.s.                       |
| Most people who never have accidents are “just lucky”.   | 3.73/3.65     | .605/n.s.                          | 3.45/3.58     | -2.247/.02/.01                     | 2.08/n.s.                       |
| When buying a new product, reading safety –related instructions is important                           | 2.03/2.27     | -2.201/.03/.05                     | 2.05/2.06     | -.347/>.05                         | 3.358/n.s.                      |
| Parents should stick to the recommended age range when purchasing toys.                                | 2.69/2.70     | -.099/n.s.                         | 2.58/2.42     | 3.091/sig./02                      | 1.750/n.s.                      |
| There is a relationship between human behaviour and accident rates.                                    | 2.28/1.93     | <b>3.969/sig./15</b>               | 2.22/2.15     | 1.588/>.05                         | <b>6.642/sig</b>                |
| How a person is feeling has an effect on the likelihood of an accident occurring.                      | 2.47/2.16     | <b>2.913/sig./09</b>               | 2.19/2.09     | 2.172/.03/<.00                     | 2.932/n.s.                      |
| Some individuals have a natural tendency to take risks.  | 2.03/2.04     | -.107/n.s.                         | 1.96/2.02     | -1.384/>.05                        | .193/>.05                       |
| Accident-prone people have little control over the number of accidents in which they are involved.     | 3.22/3.34     | -.844/n.s.                         | 3.05/3.20     | <b>-2.635/sig./01</b>              | .056/>.05                       |
| Driving a car while drunk is an individual choice.   | 2.33/2.52     | -1.065/n.s.                        | 2.34/2.48     | -1.954/n.s.                        | .082/>.05                       |
| Seat belt use is only important for long trips while driving at high speed on motorways.               | 4.47/2.54     | -.581/n.s.                         | 4.48/4.40     | 1.530/n.s.                         | 1.192/>.05                      |

Two items were used to measure perceived knowledge beliefs of the students; the results of which can be seen in Table 3.21. For both items, significant interaction effects were observed. Repeated measures t-tests reveal a significant difference within the intervention group between pre- and post intervention, with students in the intervention group more likely to respond more favourably to both items at post intervention.

**Table 3.21: Control vs Intervention Groups, Pre vs Post intervention  
Comparison – Perceived Knowledge**

| Item  | Control       |                                  | Intervention  |                                  | Control vs Intervention         |
|---|---------------|----------------------------------|---------------|----------------------------------|---------------------------------|
|   | Mean Pre/Post | T value/significance/effect size | Mean Pre/Post | T value/significance/effect size | ANOVA (F Value)and significance |
| <b>I am well-informed about how to take care of my safety and health in the workplace</b> | 2.22/2.13     | .418/n.s.                        | 2.62/2.01     | <b>7.820/sig/.14</b>             | <b>6.833/sig</b>                |
| <b>I have enough resources available to stay safe in my workplace</b>                     | 2.16/2.35     | -.935/n.s.                       | 2.54/2.05     | <b>6.556/.sig/.11</b>            | <b>12.429/sig</b>               |

A final subscale with eight items was employed to measure safety outcome beliefs. Item by item analysis for this subscale is shown in Table 3.22. There was only one significant interaction effect observed.

**Table 3.22: Control vs Intervention Groups, Pre vs Post intervention Comparison – Safety Outcome Beliefs.**

| Item  | Control       |                                  | Intervention  |                                  | Control vs Intervention         |
|---|---------------|----------------------------------|---------------|----------------------------------|---------------------------------|
|   | Mean Pre/Post | T value/significance/effect size | Mean Pre/Post | T value/significance/effect size | ANOVA (F Value)and significance |
| Having a safe and healthy workplace makes employees happier       | 1.50/1.61     | -1.368/n.s.                      | 1.57/1.56     | -.059/n.s.                       | 1.513/>n.s.                     |
| Having a safe and healthy workplace makes employees healthier     | 1.87/1.87     | .000/n.s.                        | 1.80/1.72     | 1.858/n.s.                       | .519/n.s.                       |
| Having a safe and healthy workplace increases costs               | 2.81/2.56     | 1.727/n.s.                       | 2.58/2.66     | -1.535/n.s.                      | <b>5.712/sig</b>                |
| Having a safe and healthy workplace makes employees work harder   | 2.93/2.64     | <b>2.556/sig/.07</b>             | 2.66/2.52     | <b>2.583/sig/.01</b>             | 1.378/n.s.                      |
| Having a safe and healthy workplace causes employees to complain  | 4.06/3.96     | .886/n.s.                        | 4.05/3.97     | 1653/n.s.                        | .025/n.s.                       |
| Having a safe and healthy workplace takes too much time           | 3.80/3.92     | -1.043/n.s.                      | 3.80/3.88     | -1.454/n.s.                      | .116/n.s                        |
| Having a safe and healthy workplace increases quality of products | 2.18/2.18     | .000/n.s.                        | 2.23/2.24     | -.080/n.s.                       | .001/n.s.                       |
| Having a safe and healthy workplace reduces business profit       | 3.67/3.56     | .965/n.s.                        | 3.51/3.56     | -.882/n.s.                       | 1.128/n.s.                      |

### 3.9.1 Appraisal of Student Safety Beliefs: Comparison of Class Groups

All items measuring safety beliefs were also individually analysed by student group to determine attitude change over time between the two class groups. Out of the seventeen questions only one showed a significant interaction effect as shown in Table 3.23

**Table: 3.23: Transition vs Other Class Groups, Pre vs Post intervention Comparison – Safety Beliefs**

| Item   | Transition Year |                                    | Other classes |                                    | Transition vs other             |
|--|-----------------|------------------------------------|---------------|------------------------------------|---------------------------------|
|  | Mean Pre/Post   | T value/ significance/ effect size | Mean Pre/Post | T value/ significance/ effect size | ANOVA (F Value)and significance |
| I am a safety conscious person   | 2.38/2.55       | <b>2.890/sig/.02</b>               | 2.13/2.30     | -1.408/n.s.                        | <b>7.132/sig.</b>               |
| My attitudes to safety keep me safe from accidents   | 2.37/2.27       | <b>2.469/sig/.01</b>               | 2.19/2.08     | 1.04/n.s.                          | .004/n.s.                       |
| Safety is primarily a human problem  | 2.52/2.32       | <b>3.49/sig/.03</b>                | 2.3/2.1       | 1.632/n.s.                         | .001/n.s.                       |
| To reduce accidents we have to change people’s safety behaviour  | 1.76/1.74       | .651/>n.s.                         | 1.89/1.65     | <b>2.425/sig</b>                   | 4.308/.03                       |
| Parents can have a direct effect on the behaviour of their children as it relates to safety practices. | 1.75/1.82       | -1.415/n.s.                        | 2.10/1.95     | 1.30/n.s.                          | 3.660/n.s.                      |
| Everyone should receive safety-related instructions before participating in a new activity.            | 1.79/1.75       | 1.003/n.s.                         | 1.82/1.85     | -.320/n.s.                         | .532/n.s.                       |
| Accidents are, for the most part, an “Act of God”.   | 3.77/3.75       | .375/n.s.                          | 3.67/3.51     | 1.129/n.s.                         | .909/n.s.                       |
| It is simply a matter of bad luck when someone gets injured.   | 3.69/3.75       | -.961/n.s.                         | 3.54/3.50     | .223/n.s.                          | .389/n.s.                       |
| Most people who never have accidents are “just lucky”.   | 3.50/3.60       | -1.697/n.s.                        | 3.20/3.45     | -1.557/n.s.                        | 1.086/n.s.                      |
| When buying a new product, reading safety –related instructions is important                           | 2.073/2.07      | .050/n.s.                          | 1.90/2.01     | -.810/n.s.                         | .799/n.s.                       |
| Parents should stick to the recommended age range when purchasing toys.                                | 2.60/2.43       | <b>3.116/sig/.02</b>               | 2.45/2.38     | .604/n.s.                          | .536/n.s.                       |
| There is a relationship between human behaviour and accident rates.                                    | 2.19/2.12       | 1.673/n.s.                         | 2.33/2.30     | .212/n.s.                          | .199/n.s.                       |
| How a person is feeling has an effect on the likelihood of an accident occurring.                      | 2.18/2.06       | <b>2.524/sig/.02</b>               | 2.21/2.23     | -.195/n.s.                         | 1.148/n.s.                      |
| Some individuals have a natural tendency to take risks.  | 1.95/1.99       | -.827/n.s.                         | 2.01/2.17     | -1.455/n.s.                        | 1.000/n.s.                      |
| Accident-prone people have little control over the number of accidents in which they are involved.     | 3.08/3.23       | -2.279/.02/.01                     | 2.90/3.07     | -1.409/n.s.                        | .034/n.s.                       |
| Driving a car while drunk is an individual choice.   | 2.35/2.48       | -1.677/n.s.                        | 2.29/2.48     | -1.014/n.s.                        | .117/n.s.                       |
| Seat belt use is only important for long trips while driving at high speed on motorways.               | 4.51/4.40       | 1.730/n.s.                         | 4.38/4.39     | -.086/n.s.                         | .617/n.s.                       |

One significant interaction effect was also found when the items measuring perceived safety knowledge were analysed. As shown in Table 3.24, the transition year group showed greater change over time i.e. they were more likely to say that they were well informed about how to take care of their safety and health in the workplace after completion of the Choose Safety module than the other classes. Only one safety outcome belief showed an interaction effect when analysed by class group, but not at a level considered significant for this study (see Table 3.25).

**Table: 3.24: Transition vs Other Class Groups, Pre vs Post intervention Comparison – Perceived Safety Knowledge**

| Item   | Transition Year |                                    | Other classes |                                    | Transition vs other              |
|--|-----------------|------------------------------------|---------------|------------------------------------|----------------------------------|
|  | Mean Pre/Post   | T value/ significance/ effect size | Mean Pre/Post | T value/ significance/ effect size | ANOVA (F Value) and significance |
| I am well-informed about how to take care of my safety and health in the workplace | 2.73/2.04       | <b>8.024/sig/.18</b>               | 2.11/1.85     | 1.403/n.s.                         | 4.625/.03                        |
| I have enough resources available to stay safe in my workplace                     | 2.61/2.07       | <b>6.295/sig/.12</b>               | 2.24/1.95     | 1.929/n.s.                         | 1.579/>n.s.                      |

**Table: 3.25: Transition vs Other Class Groups, Pre vs Post intervention Comparison  
– Safety Outcome Beliefs**

| Item  | Transition Year |                                    | Other classes |                                    | Transition vs other             |
|---|-----------------|------------------------------------|---------------|------------------------------------|---------------------------------|
|   | Mean Pre/Post   | T value/ significance/ effect size | Mean Pre/Post | T value/ significance/ effect size | ANOVA (F Value)and significance |
| Having a safe and healthy workplace makes employees happier       | 1.57/1.58       | -.063/n.s.                         | 1.53/1.53     | .000/n.s.                          | .001/n.s.                       |
| Having a safe and healthy workplace makes employees healthier     | 1.79/1.73       | 1.372/n.s.                         | 1.86/1.69     | 1.437/n.s.                         | .822/n.s.                       |
| Having a safe and healthy workplace increases costs               | 2.58/2.63       | -1.042/n.s.                        | 2.57/2.79     | -1.270/n.s.                        | 1.000/n.s.                      |
| Having a safe and healthy workplace makes employees work harder   | 2.67/2.42       | <b>3.226/sig/.03</b>               | 2.59/2.68     | -.609/n.s.                         | 3.539/n.s.                      |
| Having a safe and healthy workplace causes employees to complain  | 4.09/4.00       | 1.830/n.s.                         | 3.80/3.77     | .163/n.s.                          | .241/n.s.                       |
| Having a safe and healthy workplace takes too much time           | 3.81/3.89       | -1.508/n.s.                        | 3.75/3.77     | -.203/n.s.                         | .160/n.s.                       |
| Having a safe and healthy workplace increases quality of products | 2.21/2.19       | .267/n.s.                          | 2.38/2.49     | -.734/n.s.                         | .710/n.s.                       |
| Having a safe and healthy workplace reduces business profit       | 3.57/3.56       | .122/n.s.                          | 3.19/3.56     | -2.030/n.s.                        | 5.358/.02/.01                   |

### **3.9 Process Evaluation**

#### **3.9.1 Student perceptions**

Students were asked, by way of the main questionnaire at post intervention, to comment on the level of enjoyment, importance, usefulness etc of the module generally, and also specific elements (workbook and DVD, project work and case studies) and units. These results can be seen in Tables 3.26 and 3.27.

The students were generally positive about the material. More enjoyed it than not, and considered it important than not, although about 40% in each case either didn't or were neutral. Over a quarter considered it too easy (28%) with over a third being neutral on this item. This is consistent with 41% disagreeing with the item "Before doing the module I knew very little about safety in the workplace". Just two thirds found it interesting, although 42% agreed that only a few in the class found it interesting, and almost one third are not keen to do further study on the topic. Attitudinal items such as the importance of a safe working environment, staying safe, the relevance to future career and awareness of risk received the most positive endorsements overall.

In terms of ease of use the ratings were very positive, and the workbook received marginally better rating than the DVD, although again both predominantly positive.

Regarding the specific Units and the exercises, case studies and project work, the students gave favourable 'usefulness' ratings, the majority in every case giving ratings at the mid point and higher end of the 5 point scale offered. Ratings of level of enjoyment were all similar biased towards the positive end of the scale, although consistently, if marginally, less favourable than the usefulness ratings, indicating that students found the material more useful than enjoyable. All Units were given very similar ratings indicating that either they were equally liked, or that the students were not discriminating in their approach to the task.

**Table 3.26: Students' perceptions of course material**

|   | <b>Strongly Agree</b> | <b>Agree</b>     | <b>Neither...</b> | <b>Disagree</b> | <b>Strongly Disagree</b> |
|---|-----------------------|------------------|-------------------|-----------------|--------------------------|
| The CS programme was enjoyable  | 15%                   | 44%              | 24%               | 13%             | 5%                       |
| The CS module was too easy for me as I knew most of it already                    | 8%                    | 20%              | 35%               | 32%             | 5%                       |
| The CS module is as important as any other subject                                | 16%                   | 44%              | 26%               | 11%             | 3%                       |
| The CS module was interesting   | 15%                   | 50%              | 20%               | 12%             | 3%                       |
| The CS has taught me that having a safe working environment is important          | 28%                   | 54%              | 14%               | 3%              | 1%                       |
| The CS module helps me stay safe  | 23%                   | 50%              | 20%               | 5%              | 2%                       |
| CS module gives me ideas that help in other subjects                              | 15%                   | 35%              | 28%               | 17%             | 5%                       |
| Only a few students in the class were interested in the CS programme              | 12%                   | 30%              | 33%               | 19%             | 6%                       |
| Before doing the module I knew very little about safety in the workplace          | 10%                   | 27%              | 22%               | 34%             | 7%                       |
| I believe that health and safety will be relevant in my future career and work    | 31%                   | 51%              | 14%               | 4%              | 1%                       |
| CS module has influenced my attitude to workplace H&S                             | 22%                   | 51%              | 21%               | 5%              | 1%                       |
| The CS module has helped me to be aware of the risks and hazards in the workplace | 24%                   | 56%              | 14%               | 5%              | 1%                       |
| I would like to do further study in school on H&S                                 | 13%                   | 26%              | 31%               | 21%             | 10%                      |
| <b>Rate...</b>  | <b>Excellent</b>      | <b>Very Good</b> | <b>Good</b>       | <b>Fair</b>     | <b>Poor</b>              |
| Ease of use   | 28%                   | 35%              | 29%               | 6%              | 2%                       |
| Interest/enjoyment of workbook  | 19%                   | 29%              | 30%               | 12%             | 10%                      |
| Interest/enjoyment of DVD   | 26%                   | 28%              | 27%               | 11%             | 7%                       |



**Table 3.27: Students' perceptions of elements of module**

| Item                                    | Useful/<br>Enjoyable |           |           |           | Useful/<br>Enjoyable* |
|---|----------------------|-----------|-----------|-----------|-----------------------|
|   | 1                    | 2         | 3         | 4         | 5                     |
| <b>Unit 1: Accidents happen</b>         | 3% / 10%             | 8% / 16%  | 34% / 31% | 28% / 27% | 27% / 17%             |
| <b>Unit 2: Wanna Bet?</b>               | 5% / 8%              | 9% / 16%  | 37% / 32% | 28% / 29% | 20% / 15%             |
| <b>Unit 3: You've been warned</b>       | 3% / 9%              | 9% / 13%  | 28% / 33% | 35% / 27% | 25% / 18%             |
| <b>Unit 4: Not my problem... Is it?</b> | 6% / 9%              | 9% / 16%  | 29% / 29% | 31% / 27% | 26% / 18%             |
| <b>Unit 5: Communicating the risk</b>   | 6% / 9%              | 7% / 12%  | 30% / 28% | 29% / 30% | 28% / 20%             |
| <b>Unit 6: It has happened before</b>   | 4% / 10%             | 6% / 13%  | 32% / 31% | 33% / 25% | 26% / 20%             |
| <b>Exercises and activities</b>         | 7% / 10%             | 11% / 16% | 30% / 27% | 27% / 26% | 23% / 21%             |
| <b>Case Studies</b>                     | 6% / 11%             | 12% / 15% | 30% / 29% | 27% / 26% | 23% / 19%             |
| <b>Project Work</b>                     | 12% / 17%            | 8% / 16%  | 31% / 23% | 24% / 21% | 24% / 22%             |

*\* 5 point scale used where 1 = least useful/enjoyable, 5 = most useful/enjoyable*

The exercises, case studies and project work similarly were not responded to very differently, although it does seem that these were seen as slightly less useful and enjoyable than the six units.

Three class discussions were held with the groups of students whom had completed the module sufficiently prior to the end of term to arrange the meeting. As these three class groups may not be representative of the entire sample of groups, it is important not to interpret their comments as representative, but as a way of illuminating the quantitative data. The learning experience in any one class group will be influenced by a range of external factors, such as; the particular experience and interest of the teacher, the interpersonal dynamics of the class and the general culture in the school toward health and safety. However the advantages of using qualitative data in this way are that it allows for issues to emerge that that are not addressed in a survey, it gives students a chance to hear and react to the perspectives of others, and to make suggestions for improvement.

Across the three class groups, 50 students participated. The DVD was used in only two of the groups. The positive aspects of the module, from the students' perspective, centred on its application to work:

*It's really worthwhile when we go into work and know how to keep safe (Group 1)*

*Very good when you'd go into a company (Group 2)*

*It's a useful course for when you leave school (Group 3)*

The students commented on how the material was really common sense, but it was acknowledged that there was a value in the taught module nevertheless, as the following exchange shows:

*There's an awful lot of common sense in it so I feel we know lots before we ever started the course – so we don't need it....*

*Well I think that it might be common sense but it makes you more aware (Group 1)*

The exercise and case studies were valued, as was the discussion they prompted:

*The exercises and case studies were very good because they were to do with real life (Group 2)*

*The exercises, case studies and all that was very good. They were interesting (Group 3)*

*The teacher went very fast with it but you wouldn't forget it at all. We talked about it all of us among ourselves during some classes (Group 3)*

What was disliked about the module included the amount of writing in the exercises and the fact that much of the material was known already. There were comments on repetition and boredom. In one group students found the tone to be condescending and patronising, and they wanted more 'reality'. The DVD was noted to be better than writing but, particularly in one group, came in for some criticism:

*The guy in the DVD was very ugly looking and he was funny - he was funny bad*

*The DVD was better than reading and writing*

*But the actors were bad and the plot was bad*

*....It just wasn't believable*

*It was just a matter of making it better and it wasn't long enough and that would make it a bit better. All the information is in the book anyway so there's no need for it*

*The acting on the DVD was no good – like “I fell” and “I broke my arm” – it just didn't seem real you need to make it more real (Group 1)*

Specific suggestions for improvement appear in Box 3.1. Overall it would seem that although giving broadly positive ratings within the survey, the students would like to see more real life examples, and more opportunities for interaction with the material rather than reading and writing.

### **Box 3.1: Students' suggestions for improvements in 'Choose Safety'**

*I think there should be more games in it....and more participation with the class.....Yeah we learn easier by doing*

*There should be a practical exam or a test about it*

*We should have visitors who had an accident coming to the school telling us real stories about how things happened and what they did – that would be good.*

*There should be interaction instead of reading all the time*

*More games and more real life situations*

*More interactive and more role play*

*We should have competitions maybe inter school competitions and in the school as well and table quizzes and all*

*We could go on field trips to factories to get ideas of what's involved and get ideas about real things*

*You could have health and safety awards*

### **3.7.2 Teacher perceptions**

Fifty six teachers were contacted to participate in the evaluation. Twenty nine responded yielding a response rate of 52%. Teachers were asked to give rate various aspects of 'Choose Safety'. As can be seen (Table 3.28) the module was very well received by teachers. Teachers enjoyed teaching the material, perceived student interest to be high and interaction in classes good. Teachers considered the students to find the material interesting and to a lesser extent enjoyable. Only one teacher thought the material in the module to be too easy. Both elements,

the workbook and the DVD, were rated positively and the workbook seen to be highly relevant to the DVD.

**Table 3.28: Teachers' perceptions of course material**

|  | <b>Strongly Agree</b> | <b>Agree</b>     | <b>Neither...</b> | <b>Disagree</b> | <b>Strongly Disagree</b> |
|--|-----------------------|------------------|-------------------|-----------------|--------------------------|
| <b>I enjoyed teaching 'Choose Safety'</b>                                  | 34%                   | 60%              | 3%                | 0%              | 3%                       |
| <b>'Choose Safety' is as important as any other subject</b>                | 31%                   | 59%              | 3%                | 7%              | 0%                       |
| <b>I would like to see 'Choose Safety' introduced to all classes</b>       | 28%                   | 35%              | 31%               | 3%              | 3%                       |
| <b>I would like to continue teaching 'Choose Safety'</b>                   | 34%                   | 60%              | 3%                | 0%              | 3%                       |
| <b>Students found the subject matter interesting</b>                       | 18%                   | 73%              | 3%                | 3%              | 3%                       |
| <b>Students found the subject matter enjoyable</b>                         | 17%                   | 49%              | 28%               | 0%              | 3%                       |
| <b>'Choose Safety' helps students in other curricular areas</b>            | 17%                   | 59%              | 17%               | 0%              | 0%                       |
| <b>There was a high level of interaction with students during delivery</b> | 28%                   | 55%              | 14%               | 0%              | 3%                       |
| <b>'Choose Safety' was too easy for my students</b>                        | 4%                    | 0%               | 30%               | 47%             | 19%                      |
| <b>WORKBOOK</b>  | <b>Excellent</b>      | <b>Very good</b> | <b>Good</b>       | <b>Fair</b>     | <b>Poor</b>              |
| <b>Ease of use</b>   | 34%                   | 39%              | 24%               | 0%              | 3%                       |
| <b>Appearance</b>  | 49%                   | 34%              | 14%               | 0%              | 3%                       |
| <b>Content</b>   | 31%                   | 49%              | 10%               | 7%              | 3%                       |
| <b>Student interest</b>  | 21%                   | 38%              | 31%               | 7%              | 3%                       |
| <b>DVD</b>   |                       |                  |                   |                 |                          |
| <b>Content</b>   | 24%                   | 49%              | 14%               | 3%              | 3%                       |
| <b>Relevance to workbook</b>   | 17%                   | 56%              | 14%               | 3%              | 3%                       |
| <b>Student interest</b>  | 20%                   | 39%              | 20%               | 7%              | 7%                       |

Teachers were invited to comment through opened-ended questions regarding the specific units, and with suggestions for improvement. Comments largely supported the ratings, with teachers finding the material easy to use and stating that the module was 'very worthwhile', an 'enjoyable course' and 'excellent'. All units, project work and the DVD were commented upon in positive terms. Three quarters of students were expected to achieve a certificate of

completion and a further 15% certificates of distinction. Certification was viewed very positively, endorsed by all teachers. For example:

*I felt it was very useful for all students doing work experience. It should be introduced widely and the certification is a wonderful idea. It gives the students a sense of achievement (T34)*

The comments provided by the teachers help illuminate what was good about the material. They described it as being very comprehensive, well constructed, relevant and 'to the point', and felt that 'it all blended together well'. Having a book, rather than just handouts and overheads, was seen as positive as it gave health and safety 'subject status'. The work sheets contained within the module were found to be useful, and the safety statement merited particular comment. One teacher for example commented:

*I really enjoyed the Choose Safety programme and hope to continue to run it in the school next year. A very worthwhile programme for good and interested transition year students, as I luckily have this year (T31)*

While this positive response was typical, there were some negative comments. Another teacher, perhaps not as fortunate with his/her students, found it:

*...too long for 15-16 year olds....I had transition students and with them being involved in so many activities I missed a few classes. By the end they were groaning at the sound of safety.*

However the Teacher did not think the topic or the module dismissible, continuing:

*I believe a much shorter snappier module with some of the best features of the course would work better (T4)*

Time constraints however was the most frequently raised difficulty. One teacher, who described the course as 'very worthwhile and very informative' added that 'it was a nightmare getting the course completed'. Others noted that they did not get time to use all units it was a bit rushed and that it took longer than expected. To some extent this may be a function of where (i.e. class group) the material was introduced. More than two thirds of teachers (69%) taught the material in block format, the remainder used regular classroom format. The block format however posed particular problems. Although there were concerns about timetabling,

many students completed over half of the course units (see Table 3.29.). It seems difficulties could be addressed with more notice and advance planning:

*Time restraints! Also not all students were present for all modules....making it hard to move on. Possibly better if it was done in a block of classes- which didn't suit timetabling. I felt it should have been planned better (T35)*

*Very worthwhile...(but)...fitting it into existing timetable and getting a teacher to deliver it not always easy (T21)*

*We squeezed the module in because we had not planned for it prior to the academic year. Next time we are timetabling 1 lesson per week specifically for the module (T20)*

*As time ran out I didn't get to do much in terms of projects – maybe next year if I can get started earlier (T29)*

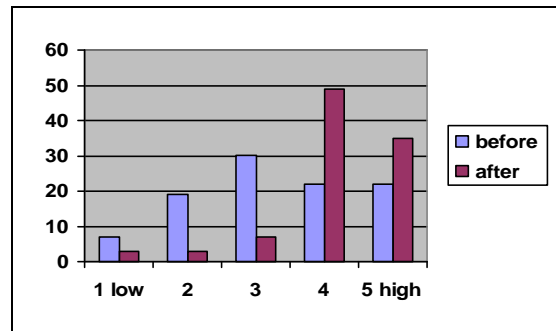
**Table 3.29: Number of Units delivered**

| <b>Number of units delivered</b> |     |       |
|----------------------------------|-----|-------|
| One                              | 3   | .5%   |
| Two                              | 14  | 3%    |
| Three                            | 6   | 1%    |
| Four                             | 49  | 10.5% |
| Five                             | 102 | 22%   |
| Six                              | 208 | 45%   |
| Don't Know                       | 85  | 18%   |

Teachers made suggestions for improvement which were of a specific practical nature, rather than substantive criticisms of the quality or thrust of the material. These can be seen in Box 3.2.

Teachers' own interest in the subject of health and safety increased as a result of delivering the modules, as can be seen from Figure 3.1.

**Figure 3.1: Teacher interest in topic before and after delivery**



Finally teachers were asked to identify ways in which they could be supported in the delivery of 'Choose Safety'. The main way in which the Department of Education and Science was perceived to support the module would be by allowing dedicated time to teach it, and incorporating it into the curriculum. The H.S.A. was seen as an important source of support, particularly in the form of provision of expert speakers, combined certification of the module and the provision of training for teachers. While 59% of teachers reported being prepared to teach the material, a similar amount (56%) also agreed that they would benefit from training. At the level of the school, support could be provided around timetabling and linking material in with other related topics within the curriculum.

### **Box 3.2: Teachers' suggestions for improvements in 'Choose Safety'**

*More student activity....some case studies would make topics real/relevant to life (T1)*

*Perhaps bold print would catch students' attention to emphasise a point. A bit more colour would make the book attractive. More pictures of cartoon figures could be used – a bit of humour goes a long way (T17)*

*Perhaps some role playing (T34)*

*The page numbers for the students' workbooks should be printed on the corresponding pages of the teachers' workbook – it's confusing! Consider literacy in all the written work(T34)*

*More graphic descriptions of what could go wrong due to carelessness (T3)*

*More statistics of what accidents happen in Ireland (T35)*

*Risk assessments – an example in maybe a cookery room or science lab be included making it more useful for use in a girls school (T24)*

*Chemical controls too details – simplify....Scrap pages 79-81. Most of this unit too vague for 16 year olds (T4)*

*Actual case studies – maybe of accidents gone through in the counties. Students identify with something that happens locally or nearby (T35)*

*Link in with students partaking in a 'safe pass' or 'first aid' training it would add a practical element to the course (T1)*

*I think a separate activity workbook would be good as once they write on the text book it cannot be re-used (T30)*

*Having even more on the DVD would be great (T29)*



### 2.7.3 Coordinators evaluation

Coordinators were asked to comment in particular on the operational aspect of the project. Their comments were generally positive; they valued in particular the half day training provided. In the main it was felt to be sufficient in terms of training but they would have liked more contact, either through e mail or meetings throughout the project:

*At one stage I sent .....an e mail. I had felt like an educational messenger boy, in the sense that at the end of the day I had no-one to talk to....no-one to tell me if I had done right or wrong (P2)*

*I think there should be some follow up meetings I felt sometimes that I was cut loose, without any contact – in a wasteland (P1)*

On balance, however, they did consider the project and their role in it worthwhile.

They described the work as having two parts - the initial meeting with the teacher and then subsequently getting the material out to teachers. There was variation in how this was approached with some making prior appointments and others favouring cold calling. Tracking down and getting meetings with teachers was described as difficult. A situation was recounted where the principal had agreed on behalf of a teacher but not informed. Other difficulties included accessing teachers, teachers not having time to meet except in their tea break etc. However this first meeting was seen to be important by all, and guidelines for this, based on evidence from similar project was identified as an important improvement in the operational model.

The coordinators felt that being a retired teacher was positive as they knew how things worked in schools.

*I think it was a great help being a retired teacher and I could go into schools on a casual basis. You weren't going in on officialdom. That always puts teachers straight off (C1)*

They all agreed strongly that the material was well received by the teachers they dealt with:

*...when they saw the contents they went for it. I mean the Department wants teachers to download and photocopy everything but teachers were salivating when they saw this book! (C1)*

*It was the first time teachers ever had a book on health and safety and they thought it was great (C3)*

*One teacher ...asked me for 72 books for next year – she was really enthusiastic about it (C2)*

The discussion with coordinators revealed real problems with timing, due principally to the late availability of the material for the pilot. This was particularly acute for those in remote areas.

*I felt by September it was all very rushed especially in an area like ..... I found to get the course started was a problem. There was such big distances for me. Most times I could only get one school done in a day and there was such an awful lot of travel in that part of the world....If you had the materials, the books, earlier it would make a big difference. Some of the teachers knew nothing about the programme till September and trying to get them started well, that was difficult, the schedule was so full...despite best efforts some schools couldn't fit the course in with the timetable already full (C3)*

*But we didn't get the books until the latter half of September! (C2)*

However coordinators were also impressed with teachers' enthusiasm for the project and willingness to find space and time for it.

Administrative support from the VEC was valued in principle of but of limited practical use. Coordinators found it easier to phone from their own homes/mobiles than to travel to a centre to make calls.

The coordinators had specific suggestions for improvement, mainly around the separation of the book from the worksheets. They raised this in the context of concerns about sustainability. While welcoming the course they acknowledged that continuing to deliver it in this way would be costly.

*It's an extensive workbook. If it was tailored differently than it is – maybe keep more of an answer sheet type of workbook, then it cost less to produce. You could have a separate answer sheet (C4)*

*I think they should use copy book (C2)*

### **Chapter Summary**

The results show that the majority of the students who completed the 'Choose Safety' pilot programme were in the 15-16 year old bracket and in Transition Year. There were some significant differences between the control and intervention group in terms of gender and age at pre-intervention stage, but this was largely removed at post-intervention stage. In terms of employment, 44% of students stated that they worked part-time, especially the older students (e.g. 17-19 year olds had an employment rate of 56%). More females than males were engaged in employment and the hours worked per week could be considered long with approximately 50% completing more than 11 hours per week. Gender segregation was evident in the sectoral analysis of employment, with females largely engaged in caring roles and the service sector and males engaged in construction and 'other' work. Only one third of those working had received any safety training.

Significant positive changes in the levels of safety knowledge were observed between the pre and post intervention questionnaires for the majority of students. However, there was minimal change in either safety behaviour or safety beliefs between pre and post intervention stages.

The 'Choose Safety' workbook and DVD received generally positive feedback in the student post intervention questionnaire, however over a quarter of students did think the material was too easy. The group discussion session with the students again generated mainly positive feedback on the material. However, one of the main criticisms was that a lot of the material was already known.

The teachers' questionnaire found that the module was generally well received by the teachers with the units, project work and DVD all receiving positive responses. One of the main

negative issues was the impact of time constraints on the delivery of the course. Recommendations included incorporating the material into the curriculum and the provision of teacher training.

The feedback from the coordinator group discussion session was also predominantly positive, with the half day training course in particular getting praise.

## *Discussion*

The school is a key setting for health promotion and education interventions generally, and a number of educationally based packages have been developed for use within secondary schools. Interventions vary by type and focus, ranging from general interventions encompassing a variety of health issues to those that focus on topics such as smoking, physical education or safety. 'Choose Safety' is a good example of a topic-based intervention for use in the post-primary school sector with the aim of preparing their students for the health and safety aspect of their work experience programme.

Within the discipline of Health Promotion, increasing emphasis is being placed on the importance of evaluating interventions such as 'Choose Safety', in order to feed into the growing evidence-base for health improvement in individuals, organisations and at population level. Similarly, emphasis is placed on sustainability; the production of interventions that may be sustained over time. A sustainable programme is defined as one that has become self-maintaining or 'routinised' within an organisation on the one hand, and 'standardised' within policy-making institutions on the other (Elsworth and Asbury, 2005). However it is important not to adopt the mantra of sustainability without some critical reflection. It is necessary to ensure that an intervention works appropriately, and achieves the desired impacts and outcomes, before sustainability is addressed (St.Ledger, 2005). Sustainability, in terms of the agency and policy-making structures should only be explored as a final step in the life cycle of programme evaluation (Scheirer, 2005). St Ledger (ibid.) offers a number of examples of approaches and interventions in health promotion generally that have been shown not to work and therefore would have been unwise to sustain. This evaluation focused on programme impact and outcome at the level of the individual, a necessary first step in exploring programme sustainability.

The overall aim of this study was to conduct a comprehensive evaluation of the 'Choose Safety' module, piloted by the H.S.A in September 2007. The module is a teaching and learning pack for students in Transition Year, Leaving Certificate Applied or Leaving Certificate Vocational Programme. The pack comprises a workbook for students, a workbook for teachers and a DVD. To this end, sixty four schools, which involved 105 class groups and 56 teachers, were invited to participate in the evaluation. All students were asked to complete

survey questionnaires prior to the start of the module and after it was completed, assessing the impact of the module in terms of health and safety knowledge, behaviours, beliefs (values) and process aspects such as their general appraisal of the suitability of the module material. Eight class groups (176 students) acted as a control group. Seventy one class groups (1,277 students) in the intervention returned pre-intervention questionnaires and 36 groups in total returned post intervention questionnaires, yielding an overall response rate of 46%. Teachers were asked to complete questionnaires post intervention and 29 did so, yielding a response rate of 52%. Coordinators (of material for dissemination) at local level took part in a group discussion, as did three class groups, which contributed to the process aspect of evaluation. Outcome evaluation (at 3 months post intervention) was not possible due to the fact that most schools chose to run the module until the end of the school year.

### **Profile of Students: hours working and occupational sectors**

The overall gender composition of the sample was well balanced with slightly more female than male respondents (55% versus 45%). The majority of students taking the 'Choose Safety' module were in Transition Year at school which corresponded with the majority of students aged 15 and 16 years taking the course (87%). A minority of schools (3%) choose to run the 'Choose Safety' module in other years e.g. 5<sup>th</sup> year.

As students could not be randomly allocated to the control or intervention group, the student groups were analysed to determine any important differences between the intervention and control group. A number of significant differences were observed which may be responsible for some differences in results between the groups e.g. at the pre-intervention stage there were more girls in the control group (66%) than in the intervention group (54%). In addition there were also age differences between the groups with the intervention group containing more younger students at both pre- and post intervention stages. A note of caution must be struck with regard to determining the representativeness of our student sample in comparison with the national student population. We estimate that our sample frame constitutes 3% of the total secondary school student body, however as the participating schools were not randomly chosen we cannot ensure representativeness.

When the work patterns of the students were analysed some interesting results were observed at the pre-intervention stage, that is, 44% of the sample reported that they were working. The percentage of students reporting being employed in this study is double the national rate of 22% as recorded by the Central Statistics Office (2008), therefore, indicating some disparity or uncertainty with regard to the true number of students employed. McCoy & Smyth (2007)

reported that 61% of Irish Leaving Certificate students worked part time in 2002 and Hope, Dring & Dring (2005) have reported that 56% of third level students work in paid employment during term time, and 21% work more than 16 hours per week. Therefore, the 44% figure obtained in this study is more in line with these higher estimates, than the CSO figure.

Of the 44% employed, just over half were engaged in regular hours. In addition, many students were engaged in long working hours e.g. 14% of the pre-intervention group reported working 9-11 hours; however, 25% reported working other hours (during term), which is considered to mean in excess of 11 hours per week. At post intervention stage, more detailed questioning of work hours was conducted which revealed that, during term, 12% of the sample was engaged in employment from 16-20 hours per week, with a minority (4%) working 21-25 hours per week. As noted by Wegman & Davis (1999) there are a number of negative outcomes associated with working long hours while at school (e.g. reduced academic advancement, smoking, deviant behaviour, use of illegal drugs, fatigue, less exercise and lack of family interaction), and it seems that at least a small but significant number of Irish students are at risk of these negative outcomes, if our 4% figure is extrapolated to the general student population.

The findings in relation to occupational sectors are in line with previous findings (e.g. EASHW, 2007), i.e. the hospitality sector and caring roles were most likely to be named as sector of employment. At pre-intervention stage, a majority of the sample (31%) reported working in a sector labelled 'other' than the choices available, therefore a decision was made to question more specifically the occupational sectors in which students work at post intervention stage. When given additional sectors to choose from, small numbers of male respondents indicated employment in the construction (10%) and motor/garage (10%) sectors; however, due to small numbers responding to this questionnaire item, caution is required when interpreting this data.

When the data on occupational sector was analysed by gender, clear differences in terms of the sectors of employment emerged, i.e. higher proportions of females employed in the caring sector (18%), hospitality (28%) and retail (39%), compared to 4% of males employed in caring roles, 20% in hospitality and 26% in retail. Male students also reported higher levels of employment in construction, motor/garage, manufacturing and farming/gardening than females. This data indicates that there is no major deviation from traditional gender roles for male and female Irish students.

The students were questioned also on training received from their employers; of those employed, only 33% of students had received health and safety training related to their work. The hospitality sector was more likely to train their young employees than other sectors. A large majority of those who had received training indicated that they had received information on safety and health hazards in their work, while just over half of these respondents had received training on the safety statement of their employer. However, given the large number of students employed in caring roles and family businesses, which in some cases may be more informal types of employment, the provision of safety training may not be seen as necessary in these settings. It is noteworthy that five percent of the respondents had completed the FAS Safe Pass course for construction work, indicating that a minority of students are engaged in this high risk sector. Overall, even allowing for those in 'informal' paid work (22%) the training statistics are worrying, as most of our working students are untrained on even basic health and safety information. This finding is however in line with British data (see Screenivasan, 2001). One of the biggest worries is that a lack of training will lead to young persons being unaware of their legal entitlements and more so, of legal prohibition with regard to work place tasks that they should not do. It does however; reinforce the need for a module such as 'Choose Safety' to be delivered in the school setting.

A number of problems emerged when analysing the student demographic and work-related data, in particular, students who completed the pre-questionnaire not responding to the post questionnaire, which reduced the overall response rate; and a number of students chose not to identify the sector in which they worked at either the pre- or post intervention stage. These factors reduce the certainty with which we can say that our profile of student employment is an accurate representation of the total student population, even though our findings are in line with current European data on young person employment trends (EASHW, 2007). Unique factors specific to the Irish student population e.g. involvement in agricultural work, were therefore not fully elucidated in the analysis. In addition, although students were asked about 'paid' employment in order to discriminate between formal and informal employment it is possible that even paid employment may not be reported accurately. Factors such as working within the extended family and perhaps the 'black economy', a desire to avoid detection if working underage or even a culture of not reporting working behaviour accurately may confound responding. It may be that more creative methodologies are required to elicit accurate information from students on these questions. In this study, questionnaires were distributed in class. Having a researcher engage with the students on-site and explain the purpose of the questions, conducting short interviews, or adapting research methods to technologies favoured by students (internet/texting), may go some way to ensure greater consistency and accuracy when answering questionnaire surveys by younger populations.



### **Appraisal of Student Knowledge**

Analysis of the knowledge questions posed to the students when taken as a whole do show positive results, with learning definitely occurring in the intervention group over time, compared to the control group. Of eleven knowledge statements given to both groups e.g. 'I understand the meaning of the term safety statement' significant differences between the groups and over time occurred. Therefore, indicating that learning did occur between pre- and post intervention for the intervention group.

However, it must be noted that in general student knowledge levels in both groups at pre-intervention stage for the knowledge statements were already quite high. There was only one item 'the meaning of the term ergonomics' for which the understanding was very low at pre-intervention stage. Learning was observed with regard to this term for the intervention group at post intervention stage. For the majority of items, most students responded that they 'mostly understood' (i.e. point four on a five point scale) the term at pre-intervention stage and this remained the same at post intervention stage for the groups. In addition, it can be noted that the levels of knowledge for the control group were in fact higher than that of the intervention group for 10 out of 11 items of knowledge at pre-intervention stage. This finding may be explained by the older age profile of the control group who may have had more exposure through different course work to some of the terms and concepts.

For a number of the hazard labels, the pre-intervention knowledge levels recorded were very high e.g. 97% of controls and 96% of the intervention students correctly identified the 'explosive label'. Again, learning did take place, with significant change occurring in the positive direction for the intervention group in five out of the seven hazard labels. One unusual finding was that for one hazard label (toxic) the control group in fact dis-improved over time, with their scores reducing from with their scores reducing from 73% correct at time one to 54% correct at time two.

For the true/false knowledge statements there was also evidence of learning in the intervention group after the 'Choose Safety' module had been undertaken. For half of the true/false statements there was a significant difference in the desired direction between the control and intervention group at the post-intervention stage.

Overall, the three sets of items which were designed to test student knowledge of health and safety information did show positive change for the intervention group overtime, however, the students' knowledge level of some of the information, in particular, some of the hazard

labels was already very high, suggesting that students may be presented with this information in perhaps other classes and/or outside of the school setting. In this context it is worth noting that when asked about how easy they found the material 28% of students reported that they considered it too easy and 41% disagreeing with the item "Before doing the module I knew very little about safety in the workplace".

When the knowledge results were analysed by class group, very few significant differences arose, which suggests that the Choose Safety module is suited to all the targeted classes i.e. Transition Year, LCA, and LCV programmes. The few significant differences that did emerge were at pre-intervention stage and favoured the Transition year classes.

Given that other similar interventions have not been formally evaluated, little is known about knowledge change. While Reed et al. (2001) did explore outcomes; this was confined to attitude and behaviour.

### **Safety Behaviour**

Knowledge acquisition alone is not sufficient to ensure the safety and health of young workers, a point recognised by Crowe (1995). He provides evidence to the fact that "many injuries result less from a lack of knowledge than from a failure to apply known safe practices". Two subscales were employed to investigate students' levels of personal safety behaviour and general safety behaviour beliefs. When the personal safety behaviour responses were analysed the results indicated that very little change occurred over time for the intervention group. In only one item was a significant interaction effect recorded i.e. 'I wear a helmet when riding a bicycle'. However the real world application of this finding is not significant as the intervention group did not even move one point on the five point response scale in the positive direction, and the positive finding is associated with the large size of the intervention group and the strength that this brings to statistical analysis.

What can be revealed from the responses to the Personal Safety Behaviour subscale is that for a number of safety behaviours, compliance was very low e.g. 'I wear a helmet when riding a bicycle' and 'I wear protective equipment when using a lawn mower'. For the statements that achieved positive responses on safety behaviour e.g. 'I wear a seatbelt when in the car' and 'I wear safety glasses when performing jobs that could lead to eye injuries', it is thought that the influence of significant others e.g. parents and teachers, could be the main factors in influencing this positive safety behaviour.

The responses to the General Safety Behaviour questions indicated a similar trend with no significant positive behaviour change occurring in the students who had completed the Choose Safety module.

However, following completion of the course Transition Year students had moved a point on the response scale for two personal safety behaviours i.e. 'I wear protective equipment when running a lawn mower'; for this question post Choose Safety the students had significantly moved from 'seldom' to 'sometimes' on the response scale. For the behaviour 'I wear a helmet when riding a bicycle' the intervention students had significantly moved from 'seldom' to 'sometimes'. The General Safety Behaviours statements when analysed by class showed a similar trend with very little change recorded. However, one positive finding was for the older classes i.e. LCA, LCV and others, there was a positive change to the statement 'It is ok to cut corners in order to get the job done quickly' with responses moving from 'sometimes' to 'seldom' on the response scale.

It must be noted in view of these findings that behaviour change is complex and even where positive changes associated with workplace health promotion interventions have been reported, often, participants revert to old habits within a short time of interventions (Ogden et al., 2007). In order for health promotion initiatives targeting students to be truly effective, both education provision and attitude/belief change are required (Crowe, 1995). Carlson-Gielen & Sleet (2003) state that often interventions are based on a simplistic assumption that by increasing a person's awareness level about the injury potential that is enough to lead to behaviour change, but this is not the case, an observation reinforced by the findings of this study.

### **Safety Attitudes and Beliefs**

According to Crowe (1995) programmes aimed at reducing unintentional injuries in teens should focus on changing safety values (beliefs) in order to have permanent or lasting results. Beliefs are distinguished from attitudes in that beliefs are not evaluative, and are the premises from which attitudes form (Malim and Birch, 1989). Attitudes are likes and dislikes--favourable or unfavourable reactions to objects, people, situations, or any other aspects of the world. Attitudes are based on underlying beliefs. Programmes which focus on increasing knowledge of students and use of nonthreatening attempts to change attitude according to Mann et al. (1986) do show increase in knowledge levels, and some changes in attitude and self-reported behaviour immediately after the programme ends; however, these changes are not enduring and tend to dissipate over time. However, in this study, levels of belief change in the intervention group were very low, with no significant changes in beliefs about

occupational health and safety after completing the 'Choose Safety' module. Only one significant interaction effect out of seventeen potential items was observed in the control group, with one belief improving slightly over time i.e. 'There is a relationship between human behaviour and accident rates'. When analysis by class group was undertaken, again, belief change was very low, and in the only significant case, in a negative direction. Therefore, overall, the Choose Safety module does not appear to have significantly changed the students' beliefs about safety and health issues. This is unfortunate given that Crowe (1995) and Blair et al. (2004) have found that a student's safety values are the strongest predictor of their safe behaviour.

On a positive note, when the students responded to items measuring their own perception of their levels of safety knowledge, the intervention groups significantly changed after completing the 'Choose Safety' module in the positive direction. Therefore, having completed the 'Choose Safety' module, students agreed with the facts that they are 'well-informed about how to take care of my safety and health in the workplace' and 'have enough resources available to stay safe in my workplace'. This relates positively to the previous finding of learning being achieved by the students completing the 'Choose Safety' module, whereby, at the end, they do feel informed about workplace health and safety issues, which is exactly what the module aimed to achieve. When the same questions were analysed by class groups, it was found that the Transition Year students reported more significant positive change following the 'Choose Safety' module than the other classes (who also reported positive change, but not at a significant level). This would support the targeting of Transition Year as the correct home for 'Choose Safety'.

The final subscale which was completed by the students was the Safety Outcomes subscale designed to investigate what the students thought were the positive and negative outcomes associated with health and safety management in the workplace. Little change over time with regard to outcomes was evidenced by the statistical analyses. A significant interaction effect was observed for only one item out of the total eight, where the control group changed attitude in the positive direction (but not to a significant level) and where the intervention group changed attitude in the negative direction for the statement 'Having a safe and healthy workplace increases costs'. Although it was found to be statistically significant (i.e. the fact that the two groups changed in opposite directions), the relevance in real term use is quite small because the change in direction for each group was less than one point on the five point response scale.

A similar interaction effect was observed when the safety outcome beliefs were analysed by class group. Again only one significant interaction effect occurred out of the eight subscale items. However, in response to the statement 'Having a safe and healthy workplace reduces business profit' in this situation, the intervention group responded positively while the control group responded negatively, but neither change was statistically significant. These changes were also less than one point on the five point response scale and therefore in real terms, lacks any useful meaning.

Overall, the level of belief change was virtually nil for students having completed the 'Choose Safety' course; however, learning and perception of knowledge levels results were more positive. This is to be expected due to the setting used for the presentation of the 'Choose Safety' module i.e. the school where students are primed for learning and assimilating new material. Reed et al. (2001) however, have shown that school based health and safety interventions can be used effectively to change student attitudes; therefore, a more radical approach may be necessary in order to change attitudes such as the inclusion of more experiential learning as suggested by Reed et al.

It should also be noted at this stage the difficulties inherent in trying to change attitudes and behaviours in general, and in particular those relating to improved health. Behaviour, for example, is undertaken as part of a complex web of social, emotional and psychological factors, and it does not follow that knowledge change easily or directly leads to behaviour change. Many theories have been developed which attempt to explain the complex pathways between knowledge, belief and behaviour change. These models, for example, highlight the fact that behaviour is undertaken in a social context and factors such as attitude specificity and social norms (Theory of Reasoned Action, Ajzen & Fishbein, 1980), perceived susceptibility and perceived barriers (Health Belief Model, Becker, 1974), and readiness for change (Transtheoretical Model, Prochaska & DiClemente, 1983) all play a role in determining behaviour. Carlson-Gielen & Sleet (2003) note that unsuccessful behaviour change interventions can be traced in part to the lack of applying health behaviour theory to the development and implementation of the intervention. They also note that selection of the correct theory depends on the specific audience, the setting and the characteristic of the behaviour to be changed.

## **Process Outcomes**

In addition to the student questionnaires, both teacher questionnaires and class discussions were used to evaluate the process aspects of the Choose Safety module i.e. the strengths and weaknesses of the programme. Overall, the module was very well received by the teachers as evidenced by the very positive statements given in their feedback questionnaires. Both the work book and DVD received very positive feedback, and in general the teachers' felt that the students were engaged during the class. The materials were rated as comprehensive and well-integrated; however, at least one teacher thought that the module was too long and needed to be shorter and snappier for 15 and 16 year olds.

The teachers did report an increased personal interest in health and safety having completed the 'Choose Safety' module which is also a positive outcome. The feedback given by the teachers on improvements or changes to the course are generally constructive and positive, the only noteworthy negative issue which arose was around time restraints that were encountered due to the late availability of the course materials and therefore, either starting the module late or having to squeeze it into the timetable. It is noteworthy that the vast majority of schools chose to implement the 'Choose Safety' module throughout the school year even if using a block format which also affected opportunities to collect outcome data as part of this evaluation.

Teachers would like to see more activities being incorporated into 'Choose Safety' e.g. case studies, role-playing, as well as some more Irish statistics, realistic risk assessment options for students e.g. science lab or home economics activity, and the inclusion of some humorous items was also thought to be beneficial with regard to the target audience. One comment centred on the addition of more graphic information about accidents, however, the suitability and usefulness of such 'fear appeal' tactics is not fully supported in the literature. The issue of providing a separate activity work book from the 'Choose Safety' student guidebook was also raised by the teachers as this would allow re-use of the books from year to year, which is important in terms of costs and sustainability of the 'Choose Safety' programme. This point was also echoed in feedback received from the Coordinators feedback sessions. The inclusion of a copy book could dramatically reduce the costs of the programme as schools may just need to order additional books on an as needs basis as opposed to each year. A charge for additional books could be levied by the H.S.A., similar to the system used in Britain by the HSE for the 'Check it Out' video pack.

As to their own competence with regards to teaching this module, a high percentage (59%) felt prepared to teach the course again, however, more than half the sample (56%) stated that

they would benefit from training. The H.S.A. was regarded as central to the provision of expert speakers, teacher training and certification of students. However, the response rate by teachers to the evaluation questionnaire is lower than that aimed for, with only 29 teachers returning the questionnaire. It is thought that the comments and issues raised by this subset of the teachers are valid and constructive with regard to items in the 'Choose Safety' module which require minor changes.

The responses from the students to the process aspects of the post-intervention questionnaire can generally be regarded as positive. The majority of students enjoyed the course and thought that it was an important topic; however, approximately 40% remained either neutral or negative towards the course. The ease of use of both the workbook and the DVD was noteworthy from the student comments, with the workbook achieving slightly higher ratings than the DVD.

When discussion sessions were held with students from three schools in relation to the module, additional qualitative feedback was gained on what the students liked and disliked in relation to 'Choose Safety'. In particular, the fact that the course was seen as preparing the students for their future in the workplace was a positive aspect and even though much of the material was regarded as common sense, it was noted that the module did heighten awareness of the issues. The exercises and case studies within the module also received positive feedback.

Some negative feedback was received, in particular the fact that in the group discussions some students did not like the DVD because it was not realistic and the acting was judged as being poor. In addition, some students recounted that they did not like the amount of writing involved in the module exercises and that much of the material was already known to them. The inclusion of more real life examples and case studies as well as opportunities for interaction was recommended as necessary changes. It is interesting to note that while a number of students did comment that the material was too easy for them and that they knew a lot of the material already; the teachers were of the opinion that the module had been pitched at the correct level for the student groups targeted. However, high levels of pre-intervention knowledge recorded in the survey do indicate that the students' perceptions were accurate.

In one class discussion it was suggested that students could make their own DVD to promote safety awareness; participation with those intending to use a product or service is in fact strongly endorsed in a number of social and health care practices. Engagement of the target group increases commitment and ownership of a project.

The model of delivery adopted for the pilot of 'Choose Safety' appears to have worked well in this pilot and the feedback from the coordinators was largely positive. However, the suitability of the co-ordinator system for a larger roll-out of the programme in the coming years was questioned. The co-ordinators noted that their role could be divided into two parts: firstly meeting the teachers and explaining the programme and then delivery of the course materials. As noted by the co-ordinators, the amount of travelling required to deliver the materials to schools was seen as problematic, and in the future it may be more efficient to have the materials dispatched directly from the H.S.A. to the schools. Additionally, alternative methods of promotion of the 'Choose Safety' module could be explored by the H.S.A. to promote the module to more schools e.g. key findings from the report could be used to promote the benefits of the module to teachers. While having experienced / retired teachers involved in the promotion of 'Choose Safety' to the schools was very beneficial, a cost-benefit comparison should be undertaken to compare the coordinator structure with perhaps a dedicated member of the H.S.A. educational unit acting as the main school liaison and course promoter.

### **Conclusion**

The pilot of the Choose Safety module for secondary school students can be considered a success from a number of perspectives. Firstly, the operational model chosen for school participation and materials distribution worked effectively and those involved (i.e. coordinators) were for the most part quite positive. Teachers who used the pack were also favourably disposed to teaching the module: they found it interesting and very much liked the course design, while students were also positive towards the pack on most counts. Students who undertook the course successfully learnt new information and achieved a sense of preparedness for entering the working world; however, attitudes and beliefs about safety behaviour did not change for those who completed this course.

This is consistent with the evidence that traditional, topic-based approaches to health education typically demonstrate gains in knowledge but are of limited value regarding deeper change in attitude and behaviour. For example, based on a systematic review of the effectiveness of school health promotion initiatives, Lister-Sharp et al., report that the impact of interventions on attitudes, health-related behaviour and health is much less reliable compared to knowledge change (Lister-Sharp et al., 1999).

The limited nature of such results is attributed to the confined nature of the intervention. Interventions that can be classified as classroom (curriculum) approaches only yield results



limited to knowledge change. Interventions that combine a classroom approach with changes to the school ethos and environment or with family and community involvement are more likely to be effective (Lister-Sharp et al., 1999; Greenberg et al., 2001a; Young et al., 2008). Similarly Byrne et al., (2005) report in the context of mental health interventions in schools that multi-component interventions that attempt to contextualise material and methods within a coordinated whole-school approach tend to be more effective.

Few educational interventions in post primary education in Ireland are subjected to a comprehensive evaluation. One exception is the 'Mind Out' programme, aiming at mental health promotion in secondary school children and young people. This programme comprises 13 classroom-based sessions, delivered over 2 years with the aim of enhancing protective factors for positive mental health in young people through an exploration of stress and coping, sources of support, emotions and relationships. The programme was evaluated across 22 schools, using pre-post test questionnaires, and results showed that the programme was well received by both teachers and pupils and a number of positive outcomes for student were demonstrated, such as raised awareness of support services, greater compassion and understanding for a young person in distress and more constructive action in seeking help for self and others (Byrne et al., 2005). However the programme did conform to the description of a multi-component programme, and had a number of other positive features that are likely to have contributed to this result. Extensive work went into programme development, including consultation with students, and the material drew on materials developed and positively evaluated elsewhere. The emphasis was on experiential learning with little emphasis on writing; teachers were trained in delivery and had online telephone support and consultation. These results are consistent with Lister-Sharp et al.'s findings and argue strongly for the development of a high support package, consultation with students and experiential teaching methodologies.

In relation to educational interventions that specifically target safety issues, interventions include the 'Youth 2 Work: Talking Safety' initiative devolved by NIOSH in the US, the 'Job Safety Skills for Young Workers' in Canada, the 'Check it out' video pack from the HSE in the UK, none of which have been formally evaluated. However it is worth noting that the AgDARE (Agricultural Disability Awareness and Risk Education) school intervention for secondary level students in Kentucky, Iowa and Mississippi, which focuses on simulations of events, was subjected to evaluation. Students who completed at least two physical and two narrative simulations showed statistically significant positive changes in farm safety attitude and intent to change behaviours (Reed et al., 2001) consistent again with the findings in other areas on the important of experiential learning and interaction.

In terms of general sustainability, a number of modifications to the programme are recommended in advance of a national roll-out, in order to improve primary impact and outcome. The pack should undergo some changes in line with the teacher and student feedback, but most particularly, in order to secure change in attitude and behaviour opportunities to develop the experiential learning element should be explored.

### **Recommendations**

1. Specific revisions of the choose safety module should be undertaken in line with both the teacher and student recommendations. In particular, attempts should be made to provide additional experiential learning opportunities throughout the programme, as both teachers and students have highlighted this issue as important. Further, the level at which the material is pitched should be reviewed.
2. A separate activity workbook from the 'Choose Safety' student guidebook should be considered as this would allow re-use of the books from year to year, which is important in terms of costs and sustainability of the 'Choose Safety' module. The inclusion of an activity copy book could dramatically reduce the costs of the programme as schools may just need to order additional books on an as needs basis as opposed to each year. A charge for additional books could be levied by the H.S.A., similar to the system used in Britain by the HSE for the 'Check it Out' video pack.
3. The involvement of students in the revision of the 'Choose Safety' module is considered extremely worthwhile as the opinions of the target audience is imperative. As seen with the very negative comments received on the DVD, if the module is to have maximum impact then the materials need to be altered in line with students' recommendations. The inclusion of additional activities and experiential learning opportunities as well as student involvement in the course design may provide to be a significant factor in aiding attitude change as opposed to increasing health and safety knowledge assimilation as Choose Safety currently does.
4. A cost-benefit comparison should be undertaken to compare the coordinator structure with alternative models of course promotion and materials dispersion, to ensure the cost efficiency and sustainability of this aspect of the programme.

5. The inclusion of an occupational psychologist in the module review team may aid in determining necessary changes to the module to encourage both attitude and behaviour change.
  
6. If a student work profile is required for policy decisions it is recommended that a more refined methodology is applied to the task, with due reference to representativeness and the maximisation of accuracy.

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**Appendix 1**  
**Pre-Intervention questionnaire**

**SECTION A**



1. **YOUR NAME:** \_\_\_\_\_

2. **Are you a boy or a girl?**    Boy    Girl

3. **Have you already started the Choose Safety Programme?**   Yes    No

4. **If you have started the course, how many units have you completed?**

1    2    3    4    5    6

**Don't know**

**5. What Year are you in?**

Transition Year   
Leaving Certificate Vocational Programme   
Leaving Certificate Applied

Other (please specify name) \_\_\_\_\_

**6. What age are you?**

15 years old  16 years old  17 years old  18 years old

**7. Are you in paid employment outside of school hours?** Yes  No

**8. If you are in paid employment do you work?**

On a regular basis  On an irregular basis (i.e. now and again)

**9. If you are in paid employment how many hours per week do you work (during term)?**

1-3hours  3-5 hours  5-7 hours  7-9 hours  9-11 hours   
other

**10. If you are in paid employment how many hours per week do you work (outside of term)?**

1-3hours  3-5 hours  5-7 hours  7-9 hours  9-11 hours   
other

**11. Have you ever had a summer job?** Yes  No

**12. If employed, in what sector do you work? Please tick one box only.**

Retail / Delivery  Leisure / Entertainment  Hotel/Restaurant/Bar   
Babysitting / Eldercare  Farming / Gardening  Other.....

**13. If employed, have you received any safety training from your current employer?**

Yes  No

**14. Did the training cover the following elements? Please tick any items covered.**

Safety statement   
Workplace hazards   
Risk assessment   
Emergency procedures   
Protective clothing and equipment   
Procedures and policies

**15. Have you completed the Fas Safe Pass training programme?** Yes  No

**SECTION B**

Please rate your level of understanding of the following terms and concepts by circling a number on the following scale:

|    |  | <b>Do not understand</b> | <b>Understand a little</b> | <b>Somewhat understand</b> | <b>Mostly understand</b> | <b>Fully understand</b> |
|----|--|--------------------------|----------------------------|----------------------------|--------------------------|-------------------------|
| 1  | The meaning of the word 'hazard'                           | 1                        | 2                          | 3                          | 4                        | 5                       |
| 2  | The meaning of the term 'personal risk'                    | 1                        | 2                          | 3                          | 4                        | 5                       |
| 3  | The meaning of the term 'manual handling'                  | 1                        | 2                          | 3                          | 4                        | 5                       |
| 5  | The meaning of the word 'ergonomics'                       | 1                        | 2                          | 3                          | 4                        | 5                       |
| 6  | The meaning of the term 'safety data sheets'               | 1                        | 2                          | 3                          | 4                        | 5                       |
| 7  | The meaning of the term 'personal protective equipment'    | 1                        | 2                          | 3                          | 4                        | 5                       |
| 8  | How to measure risk levels involved in tasks               | 1                        | 2                          | 3                          | 4                        | 5                       |
| 9  | What a safety statement is                                 | 1                        | 2                          | 3                          | 4                        | 5                       |
| 10 | The role of the Health and Safety Authority in Ireland     | 1                        | 2                          | 3                          | 4                        | 5                       |
| 11 | The role of the safety officer within the workplace        | 1                        | 2                          | 3                          | 4                        | 5                       |
| 12 | The role of the safety representative within the workplace | 1                        | 2                          | 3                          | 4                        | 5                       |

### SECTION C

Please indicate what you think each of the following hazard labels means if you saw them on a bottle:



\_\_\_\_\_

\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_

**Do you think the statements below are true or false?  
Please mark the appropriate box:**

|    |  | <b>True</b> | <b>False</b> |
|----|--|-------------|--------------|
| 1  | Most workplace accidents happen at night   |             |              |
| 2  | Young workers aged under twenty get injured more often than other age groups       |             |              |
| 3  | Falling, slipping and tripping are the least common type of accident               |             |              |
| 4  | Back damage is the most common injury in the workplace                             |             |              |
| 5  | Legally employers do not have to provide a safe working environment for workers    |             |              |
| 6  | Manual handling causes more than one-third of accidents in the workplace           |             |              |
| 7  | Most fires occur at home   |             |              |
| 8  | Male workers get injured more often than female workers                            |             |              |
| 9  | Bullying in the workplace is a health and safety issue                             |             |              |
| 10 | Employers can do nothing to reduce stress at work                                  |             |              |
| 11 | In accidents involving fire most deaths are from burns                             |             |              |
| 12 | Over 1 million work days are lost each year due to workplace injuries or illnesses |             |              |

## SECTION D

**To what extent do the following statements apply to you?**

|   | <b>Always</b>            | <b>Often</b>             | <b>Sometimes</b>         | <b>Seldom</b>            | <b>Never</b>             |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| I wear a seat belt when I am a passenger in a car   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I wear protective equipment when running a lawn mower i.e. shoes, ear plugs, safety glasses | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I wear a helmet when riding a bicycle   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I wear safety glasses when performing jobs that could lead to eye injuries                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|  |                          |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| I regularly cycle after dark without reflective clothing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|

### SECTION E

Please rate how much you agree or disagree with the following statements:

|   |  | Strongly agree           | Agree                    | Neither agree nor disagree | Disagree                 | Strongly disagree        |
|---|--|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| 1 | It is ok to cut corners in order to get the job done quickly                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 | Protective clothing is not necessary if it slows down the task                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 | It is ok to drive above the speed limit if you are in a hurry                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 | Waste and emissions from industry are ok as long as they don't harm the majority of people | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 | It is ok to disregard safety procedures if everyone else is doing so                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 6 | It is ok for a boss to shout at workers in order to get the job done quickly               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |

### SECTION F

Please rate how much you agree or disagree with the following statements:

|   |  | Strongly agree           | Agree                    | Neither agree nor disagree | Disagree                 | Strongly disagree        |
|---|--|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| 1 | I am a safety conscious person                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 | My attitudes to safety keep me safe from accidents | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 | Safety is primarily a human problem                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |

|    |  |                          |                          |                          |                          |                          |
|----|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 4  | To reduce accidents we have to change people's safety behaviour  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5  | Parents can have a direct effect on the behaviour of their children as it relates to safety practices. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6  | Everyone should receive safety-related instructions before participating in a new activity.            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7  | Accidents are, for the most part, an "Act of God".   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8  | It is simply a matter of bad luck when someone gets injured.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9  | Most people who never have accidents are "just lucky".   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10 | When buying a new product, reading safety-related instructions is important                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11 | Parents should stick to the recommended age range when purchasing toys.                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12 | There is a relationship between human behaviour and accident rates.                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13 | How a person is feeling has an effect on the likelihood of an accident occurring.                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14 | Some individuals have a natural tendency to take risks.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15 | Accident-prone people have little control over the number of accidents in which they are involved.     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16 | Driving a car while drunk is an individual choice.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17 | Seat belt use is only important for long trips while driving at high speed on motorways.               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18 | Smoking in bed should be strictly forbidden.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## SECTION G

**If you have been in employment at any stage please rate how much you agree or disagree with the following statements:**

|  | <b>Strongly agree</b>    | <b>Agree</b>             | <b>Neither agree nor disagree</b> | <b>Disagree</b>          | <b>Strongly disagree</b> | <b>Not relevant to me</b> |
|--|--------------------------|--------------------------|-----------------------------------|--------------------------|--------------------------|---------------------------|
| I am well-informed about how to take care of my safety and health in the workplace | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>  |
| I have enough resources available  |                          |                          |                                   |                          |                          |                           |

|                              |                          |                          |                          |                          |                          |                          |
|------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| to stay safe in my workplace | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|

## SECTION H

**Please rate how much you agree or disagree with the following statements:**

|   |   | <b>Strongly<br/>agree</b> | <b>Agree</b>             | <b>Neither agree<br/>nor disagree</b> | <b>Disagree</b>          | <b>Strongly<br/>disagree</b> |
|---|---|---------------------------|--------------------------|---------------------------------------|--------------------------|------------------------------|
| 1 | Having a safe and healthy workplace makes employees happier       | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/>              | <input type="checkbox"/> | <input type="checkbox"/>     |
| 2 | Having a safe and healthy workplace makes employees healthier     | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/>              | <input type="checkbox"/> | <input type="checkbox"/>     |
| 3 | Having a safe and healthy workplace increases costs               | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/>              | <input type="checkbox"/> | <input type="checkbox"/>     |
| 4 | Having a safe and healthy workplace makes employees work harder   | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/>              | <input type="checkbox"/> | <input type="checkbox"/>     |
| 5 | Having a safe and healthy workplace causes employees to complain  | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/>              | <input type="checkbox"/> | <input type="checkbox"/>     |
| 6 | Having a safe and healthy workplace takes too much time           | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/>              | <input type="checkbox"/> | <input type="checkbox"/>     |
| 7 | Having a safe and healthy workplace increases quality of products | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/>              | <input type="checkbox"/> | <input type="checkbox"/>     |
| 8 | Having a safe and healthy workplace reduces business profit       | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/>              | <input type="checkbox"/> | <input type="checkbox"/>     |

**THANK YOU FOR COMPLETING THIS QUESTIONNAIRE**

**Appendix 2**  
**Post-Intervention questionnaire**

***HELLO!***

Thank you for completing the Choose Safety Survey questionnaire last term. We are asking you to fill out this one which has many of the same questions in it. This will help us to assess your opinions of and familiarity with the Choose Safety module before and after completing the course. However, some of the questions are different from the first questionnaire as we are interested in finding out about your experience now that you have finished the Choose Safety module. It is not a test!

Please do not discuss your answers with your friends while you are answering the questionnaire.

**Things you need to know**

For many questions you will be asked to tick a box that best fits your answer. Please tick just ONE box for each question or part of a question. With some questions it may be difficult to choose just one answer so please think about what is true most of the time.



SECTION A



1. YOUR NAME: \_\_\_\_\_

2. Are you a boy or a girl? Boy  Girl

3. Have you completed the Choose Safety Programme? Yes  No

4. How many units have you completed?  
 1  2  3  4  5  6  Don't know

5. What year are you in?  
Transition Year (TY)   
Leaving Certificate Vocational Programme (LCVP)   
Leaving Certificate Applied (LCA)   
Other

6. What age are you?  
15 years old  16 years old  17 years old  18 years old

**If you are NOT in paid employment please skip next questions 5, 6 and 7**

7. If you are in paid employment in what sector do you work? Please tick one box only.

- |   |   |
|---|---|
| Shop assistant or delivery <input type="checkbox"/>   | Leisure or Entertainment <input type="checkbox"/>                 |
| <input type="checkbox"/>                              |   |
| Hotel, Restaurant, Bar, Food <input type="checkbox"/> | Babysitting or Eldercare <input type="checkbox"/>                 |
| <input type="checkbox"/>                              |   |
| Farming or Gardening <input type="checkbox"/>         | Manufacturing <input type="checkbox"/>                            |
| <input type="checkbox"/>                              |   |
| Construction <input type="checkbox"/>                 | Family Business (other than stated here) <input type="checkbox"/> |
| <input type="checkbox"/>                              |   |
| Motor/Garage <input type="checkbox"/>                 | Office Work <input type="checkbox"/>                              |
| <input type="checkbox"/>                              |   |
| Other <input type="checkbox"/>                        |   |

8. If you are in paid employment during school term how many hours per week do you work?

1-5 hours..  6-10 hours..  11-15 hours..  16-20 hours..  21-25..  More..

9. If you are in paid employment outside of term how many hours per week do you work?

1-5 hours..  6-10 hours..  11-15 hours..  16-20 hours..  21-25..  25-30..   
More..

## SECTION B

Please rate your level of understanding of the following terms and concepts by circling a number on the following scale:

|    |  | Do not understand | Understand a little | Somewhat understand | Mostly understand | Fully understand |
|----|--|-------------------|---------------------|---------------------|-------------------|------------------|
| 1  | The meaning of the word 'hazard'                           | 1                 | 2                   | 3                   | 4                 | 5                |
| 2  | The meaning of the term 'personal risk'                    | 1                 | 2                   | 3                   | 4                 | 5                |
| 3  | The meaning of the term 'manual handling'                  | 1                 | 2                   | 3                   | 4                 | 5                |
| 5  | The meaning of the word 'ergonomics'                       | 1                 | 2                   | 3                   | 4                 | 5                |
| 6  | The meaning of the term 'safety data sheets'               | 1                 | 2                   | 3                   | 4                 | 5                |
| 7  | The meaning of the term 'personal protective equipment'    | 1                 | 2                   | 3                   | 4                 | 5                |
| 8  | How to measure risk levels involved in tasks               | 1                 | 2                   | 3                   | 4                 | 5                |
| 9  | What a safety statement is                                 | 1                 | 2                   | 3                   | 4                 | 5                |
| 10 | The role of the Health and Safety Authority in Ireland     | 1                 | 2                   | 3                   | 4                 | 5                |
| 11 | The role of the safety officer within the workplace        | 1                 | 2                   | 3                   | 4                 | 5                |
| 12 | The role of the safety representative within the workplace | 1                 | 2                   | 3                   | 4                 | 5                |

## SECTION C

Please indicate what you think each of the following hazard labels means if you saw them on a bottle:



\_\_\_\_\_

\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_

**Do you think the statements below are true or false?  
Please mark the appropriate box:**

|    |  | <b>True</b> | <b>False</b> |
|----|--|-------------|--------------|
| 1  | Most workplace accidents happen at night   |             |              |
| 2  | Young workers aged under twenty get injured more often than other age groups       |             |              |
| 3  | Falling, slipping and tripping are the least common type of accident               |             |              |
| 4  | Back damage is the most common injury in the workplace                             |             |              |
| 5  | Legally employers do not have to provide a safe working environment for workers    |             |              |
| 6  | Manual handling causes more than one-third of accidents in the workplace           |             |              |
| 7  | Most fires occur at home   |             |              |
| 8  | Male workers get injured more often than female workers                            |             |              |
| 9  | Bullying in the workplace is a health and safety issue                             |             |              |
| 10 | Employers can do nothing to reduce stress at work                                  |             |              |
| 11 | In accidents involving fire most deaths are from burns                             |             |              |
| 12 | Over 1 million work days are lost each year due to workplace injuries or illnesses |             |              |

## SECTION D

**To what extent do the following statements apply to you?**

|   |   | <b>Always</b>            | <b>Often</b>             | <b>Sometimes</b>         | <b>Seldom</b>            | <b>Never</b>             |
|---|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 | I wear a seat belt when I am a passenger in a car   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 | I wear protective equipment when running a lawn mower i.e. shoes, ear plugs, safety glasses | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 | I wear a helmet when riding a bicycle   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 | I wear safety glasses when performing jobs that could lead to eye injuries                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 | I regularly cycle after dark without reflective clothing                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## SECTION E

Please rate how much you agree or disagree with the following statements:

|   |  | Strongly agree           | Agree                    | Neither agree nor disagree | Disagree                 | Strongly disagree        |
|---|--|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| 1 | It is ok to cut corners in order to get the job done quickly                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 | Protective clothing is not necessary if it slows down the task                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 | It is ok to drive above the speed limit if you are in a hurry                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 | Waste and emissions from industry are ok as long as they don't harm the majority of people | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 | It is ok to disregard safety procedures if everyone else is doing so                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 6 | It is ok for a boss to shout at workers in order to get the job done quickly               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |

## SECTION F

Please rate how much you agree or disagree with the following statements:

|    |  | Strongly<br>agree        | Agree                    | Neither<br>agree nor<br>disagree | Disagree                 | Strongly<br>disagree     |
|----|--|--------------------------|--------------------------|----------------------------------|--------------------------|--------------------------|
| 1  | I am a safety conscious person   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/> |
| 2  | My attitudes to safety keep me safe from accidents   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/> |
| 3  | Safety is primarily a human problem  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/> |
| 4  | To reduce accidents we have to change people's safety behaviour  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/> |
| 5  | Parents can have a direct effect on the behaviour of their children as it relates to safety practices. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/> |
| 6  | Everyone should receive safety-related instructions before participating in a new activity.            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/> |
| 7  | Accidents are, for the most part, an "Act of God".   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/> |
| 8  | It is simply a matter of bad luck when someone gets injured.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/> |
| 9  | Most people who never have accidents are "just lucky".   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/> |
| 10 | When buying a new product, reading safety – related instructions is important                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/> |
| 11 | Parents should stick to the recommended age range when purchasing toys.                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/> |
| 12 | There is a relationship between human behaviour and accident rates.                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/> |
| 13 | How a person is feeling has an effect on the likelihood of an accident occurring.                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/> |
| 14 | Some individuals have a natural tendency to take risks.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/> |
| 15 | Accident-prone people have little control over the number of accidents in which they are involved.     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/> |
| 16 | Driving a car while drunk is an individual choice.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/> |
| 17 | Seat belt use is only important for long trips while driving at high speed on motorways.               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/> |

## SECTION G

**If you have been in employment at any stage please rate how much you agree or disagree with the following statements:**

|  | Strongly agree           | Agree                    | Neither agree nor disagree | Disagree                 | Strongly disagree        | Not relevant to me       |
|--|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|--------------------------|
| I am well-informed about how to take care of my safety and health in the workplace | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I have enough resources available to stay safe in my workplace                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## SECTION H

**Please rate how much you agree or disagree with the following statements:**

|   |   | Strongly agree           | Agree                    | Neither agree nor disagree | Disagree                 | Strongly disagree        |
|---|---|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| 1 | Having a safe and healthy workplace makes employees happier       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 | Having a safe and healthy workplace makes employees healthier     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 | Having a safe and healthy workplace increases costs               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 | Having a safe and healthy workplace makes employees work harder   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 | Having a safe and healthy workplace causes employees to complain  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 6 | Having a safe and healthy workplace takes too much time           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 7 | Having a safe and healthy workplace increases quality of products | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 8 | Having a safe and healthy workplace reduces business profit       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |

## SECTION I

**Please rate how much you agree or disagree with the following statements:**

|   |   | Strongly agree           | Agree                    | Neither agree nor disagree | Disagree                 | Strongly disagree        |
|---|---|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| 1 | The Choose Safety programme was enjoyable   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 | The Choose Safety module was too easy for me as I knew most of the content already            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 | The Choose Safety module is as important as any other subject                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 | The Choose Safety programme was interesting   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 | The Choose Safety programme has taught me that having a safe working environment is important | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 6 | Choose Safety module helps me stay safe   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |

|    |  |                          |                          |                          |                          |                          |
|----|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 7  | Choose Safety module gives me ideas that help in other subjects                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8  | Only a few students in the class were interested in the Choose Safety programme          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9  | Before doing the module I knew very little about safety in the workplace                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10 | I believe that Health and Safety will be relevant in my future career and work.          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11 | Choose Safety module has influenced my attitude to workplace safety and health           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12 | The Choose Safety module has helped me to be aware of risks and hazards in the workplace | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13 | I would like to do further study in school on health and safety                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### Section J

Please rate the Choose Safety Workbook / DVD on the following scale:

|   |                                  | Excellent                | Very Good                | Good                     | Fair                     | Poor                     |
|---|----------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 | Ease of use                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 | Interest / Enjoyment of Workbook | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 | Interest/ Enjoyment of DVD       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### Section K

Please rate how **useful** you consider the various parts of the workbook will be to your working life by circling a number on the following scale: (1 = least useful to 5 = most useful)

|                                 |   |   |   |   |   |
|---------------------------------|---|---|---|---|---|
| UNIT 1: Accidents Happen        | 1 | 2 | 3 | 4 | 5 |
| UNIT 2: Wanna Bet?              | 1 | 2 | 3 | 4 | 5 |
| UNIT 3: You've Been Warned      | 1 | 2 | 3 | 4 | 5 |
| UNIT 4: Not My Problem...Is It? | 1 | 2 | 3 | 4 | 5 |
| UNIT 5: Communicating The Risk  | 1 | 2 | 3 | 4 | 5 |
| UNIT 6: It Has Happened Before  | 1 | 2 | 3 | 4 | 5 |
| Exercises and Activities        | 1 | 2 | 3 | 4 | 5 |
| Case Studies                    | 1 | 2 | 3 | 4 | 5 |
| Project Work                    | 1 | 2 | 3 | 4 | 5 |

Please rate your **enjoyment** of the various parts of the workbook by circling a number on the following scale: (1 = least enjoyable to 5 = most enjoyable)

|                                 |   |   |   |   |   |
|---------------------------------|---|---|---|---|---|
| UNIT 1: Accidents Happen        | 1 | 2 | 3 | 4 | 5 |
| UNIT 2: Wanna Bet?              | 1 | 2 | 3 | 4 | 5 |
| UNIT 3: You've Been Warned      | 1 | 2 | 3 | 4 | 5 |
| UNIT 4: Not My Problem...Is It? | 1 | 2 | 3 | 4 | 5 |
| UNIT 5: Communicating The Risk  | 1 | 2 | 3 | 4 | 5 |
| UNIT 6: It Has Happened Before  | 1 | 2 | 3 | 4 | 5 |
| Exercises and Activities        | 1 | 2 | 3 | 4 | 5 |
| Case Studies                    | 1 | 2 | 3 | 4 | 5 |
| Project Work                    | 1 | 2 | 3 | 4 | 5 |

**THANK YOU FOR COMPLETING THIS QUESTIONNAIRE**



### Appendix 3

## Choose Safety Survey Questionnaire for Teachers



### Section A

Please rate how much you agree or disagree with the following statements:

|   |  | Strongly agree           | Agree                    | Neither agree nor disagree | Disagree                 | Strongly disagree        |
|---|--|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| 1 | I enjoyed teaching the Choose Safety module                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 | Choose Safety is just as important as any other subject                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 | I would like to see the Choose Safety module introduced to all classes   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 | I would like to continue teaching the Choose Safety module in the future | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |

### Section B

Please rate how much you agree or disagree with the following statements:

|   |  | Strongly agree           | Agree                    | Neither agree nor disagree | Disagree                 | Strongly disagree        |
|---|--|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| 1 | Students found the subject matter interesting  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 | Students found the subject matter enjoyable  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 | Choose Safety module helps students in other curricular areas                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 | There was a high level of interaction with the students during the course                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 | The Choose Safety module was too easy for my students as they knew most of the content already | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |

### Section C

Please rate your level of satisfaction with the Choose Safety Workbook on the following scale:

|   |                            | Excellent                | Very Good                | Good                     | Fair                     | Poor                     |
|---|----------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 | Ease of use                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 | Appearance                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 | Content                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 | Student interest/enjoyment | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## Section D

Please rate your level of satisfaction with the DVD on the following scale:

|   |                                      | Excellent                | Very Good                | Good                     | Fair                     | Poor                     |
|---|--------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 | Content                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 | Relevance of DVD to workbook content | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 | Student interest/enjoyment           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## Section E

In terms of content and ease of use, what improvements, if any, would you make to:

**UNIT 1: Accidents Happen**

---

---

**UNIT 2: Wanna Bet?**

---

---

**UNIT 3: You've Been Warned**

---

---

**UNIT 4: Not My Problem...Is It?**

---

---

**UNIT 5: Communicating The Risk**

---

---

**UNIT 6: It Has Happened Before**

---

---

**Exercises and Activities**

---

---

---

**Case Studies**

---

---

---

**Project Work**

---

---

---

**DVD**

---

---

**Would you prefer to use a shorter textbook?**    Yes                       No

**Would you prefer a more detailed textbook?**    Yes                       No

**Would you prefer more student activities?**    Yes                       No

**Would you prefer fewer student activities?**    Yes                       No

**Which section of the course did you particularly like?**

---

---

---

## Section F

1. Do you think you were well prepared to teach the Choose Safety module? Yes   
No

2. Would you like to teach the Choose Safety module in the next school year? Yes   
No

3. If yes, would you require training? Yes  No

4. Please comment on how you think each of the following could support the teaching of the Choose Safety module:

a) The Health and Safety Authority:

---

---

b) Choose Safety local co-ordinators:

---

---

c) Department of Education and Science:

---

---

d) Your School:

---

---

e) Other:

---

---

5. Did you teach the Choose Safety module in: (a) average weekly class periods?

(b) block schedule format?

6. Typically how many additional preparation work hours were required for each session of the Choose Safety course?

7. Do you consider the awarding of Certificates of Completion/Distinction to students:

- (a) Worthwhile?
- (b) Not worthwhile?
- (c) Makes no difference?

8. If you are awarding Certificates how many students do you expect to receive:

Completion Certs \_\_\_\_\_ Distinction Certs \_\_\_\_\_

(See assessment on p4 of teacher's book)

9. Please rate your level of interest in the 'Choose Safety: Student Safety at Work' module *before*

*the course began* by circling a number on the following scale:

(1 = least interested to 5 = most interested)

|   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

10. Please rate your level of interest in the 'Choose Safety: Student Safety at Work' module *after*

*the course was completed* by circling a number on the following scale:

(1 = least interested to 5 = most interested)

|   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

11. Any other comments about the Choose Safety Module

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---

---

---

**THANK YOU FOR COMPLETING THIS QUESTIONNAIRE**

## **Appendix 4**

### **Group interview protocol for students**

-

Student class discussion schedule – Choose Safety course

1. Introduction
2. Draw up contract
3. Student name game
5. Tick boxes
6. Students into 3 groups depending on tick boxes
7. Brain storming re ideas to make course better
8. Game (chairs/fuzzy duck)
9. Pop Corn

**Appendix 5**  
**Group interview protocol for co-ordinators**

**Questions for Co-ordinators**

1. What background do you think is required for the role of Area Coordinator of the Choose Safety module?
2. Would you like to continue in the role of coordinator in the next school year?
3. What are/were your main responsibilities?
4. Did you find these responsibilities onerous?
5. What do you perceive as the main challenges to the successful delivery of the Choose Safety module in schools throughout the country?
6. What extra resources/supports do you think would enhance the role of coordinator?
7. What changes would you suggest to the way that Choose Safety is currently being organised and delivered?
8. Have you had any feedback from teachers about the module?
9. Any other comments about the Choose Safety Module?

## Appendix 6

### Chi Square Analysis: Comparing Knowledge, Behaviour, and Attitudes of those who have started the Choose Safety Programme to those who have not started the Choose Safety Programme (Time 1)

#### **DEMOGRAPHICS**

Table 1.2.0: Started Choose Safety Programme

|                | %     |
|----------------|-------|
| <b>Yes</b>     | 13.6  |
| <b>No</b>      | 80.6  |
| <b>Missing</b> | 5.8   |
| <b>Total</b>   | 100.0 |
| <b>N</b>       | 1277  |

Table 1.2.2: Started Choose Safety Programme and # of units completed

| <b>Units</b>      | <b>Yes</b> | <b>No</b> |
|-------------------|------------|-----------|
| <b>1</b>          | 61.3       | 4.3       |
| <b>2</b>          | 0.0        | 0.0       |
| <b>3</b>          | 1.3        | 0.0       |
| <b>4</b>          | 0.0        | 0.0       |
| <b>5</b>          | 0.0        | 0.0       |
| <b>6</b>          | 0.0        | 0.0       |
| <b>Don't know</b> | 37.4       | 95.7      |
| <b>Total</b>      | 100.0      | 100.0     |
| <b>N</b>          | 155        | 94        |

Total N = 249

#### **KNOWLEDGE**

Table 2.4.0: Started Choose Safety Programme vs. the meaning of the word 'hazard'

$X^2(4) = 1.515$ ,  $p = 0.824$  (1 cell, 10%, has an expected count less than 5; minimum expected count is 4.22)

|                            | <b>Choose Safety</b> |           |
|----------------------------|----------------------|-----------|
|                            | <b>Yes</b>           | <b>No</b> |
| <b>Do not understand</b>   | 2.9                  | 2.4       |
| <b>Understand a little</b> | 2.9                  | 4.7       |
| <b>Somewhat understand</b> | 10.4                 | 11.2      |
| <b>Mostly understand</b>   | 33.5                 | 33.5      |
| <b>Fully understand</b>    | 50.3                 | 48.2      |
| <b>Total</b>               | 100.0                | 100.0     |
| <b>N</b>                   | 173                  | 1015      |

Total N = 1188



Table 2.4.1: Started Choose Safety Programme vs. the meaning of the term ‘personal risk’  
 $\chi^2(4) = 2.997$ ,  $p = 0.558$  (1 cell, 10%, has an expected count less than 5; minimum expected count is 4.64)

|                     | Choose Safety |       |
|---------------------|---------------|-------|
|                     | Yes           | No    |
| Do not understand   | 2.9           | 2.7   |
| Understand a little | 10.5          | 8.3   |
| Somewhat understand | 19.2          | 15.4  |
| Mostly understand   | 25.0          | 27.0  |
| Fully understand    | 42.4          | 46.7  |
| <b>Total</b>        | 100.0         | 100.0 |
| <b>N</b>            | 172           | 1015  |

Total N = 1187

Table 2.4.2: Started Choose Safety Programme vs. the meaning of the term ‘manual handling’  
 $\chi^2(4) = 7.941$ ,  $p = 0.094$

|                     | Choose Safety |       |
|---------------------|---------------|-------|
|                     | Yes           | No    |
| Do not understand   | 14.5          | 16.1  |
| Understand a little | 11.6          | 18.6  |
| Somewhat understand | 26.7          | 20.1  |
| Mostly understand   | 20.3          | 21.3  |
| Fully understand    | 26.7          | 23.8  |
| <b>Total</b>        | 100.0         | 100.0 |
| <b>N</b>            | 172           | 999   |

Total N = 1171

Table 2.4.3: Started Choose Safety Programme vs. the meaning of the word ‘ergonomics’  
 $\chi^2(4) = 7.446$ ,  $p = 0.114$

|                     | Choose Safety |       |
|---------------------|---------------|-------|
|                     | Yes           | No    |
| Do not understand   | 67.5          | 64.7  |
| Understand a little | 16.6          | 12.6  |
| Somewhat understand | 8.3           | 8.2   |
| Mostly understand   | 4.1           | 5.6   |
| Fully understand    | 3.6           | 8.9   |
| <b>Total</b>        | 100.0         | 100.0 |
| <b>N</b>            | 169           | 1004  |

Total N = 1173

Table 2.4.4: Started Choose Safety Programme vs. the meaning of the term ‘safety data sheets’  
 $\chi^2(4) = 14.941$ ,  $p = 0.005$

|                     | Choose Safety |       |
|---------------------|---------------|-------|
|                     | Yes           | No    |
| Do not understand   | 29.6          | 37.0  |
| Understand a little | 32.0          | 27.1  |
| Somewhat understand | 26.0          | 16.4  |
| Mostly understand   | 5.9           | 10.0  |
| Fully understand    | 6.5           | 9.4   |
| <b>Total</b>        | 100.0         | 100.0 |
| <b>N</b>            | 169           | 1006  |

Total N = 1175

Table 2.4.5: Started Choose Safety Programme vs. the meaning of the term ‘personal protective equipment’

$$X^2(4) = 1.285, p = 0.864$$

|                     | Choose Safety |       |
|---------------------|---------------|-------|
|                     | Yes           | No    |
| Do not understand   | 6.4           | 5.7   |
| Understand a little | 8.1           | 10.1  |
| Somewhat understand | 16.9          | 14.8  |
| Mostly understand   | 20.3          | 21.7  |
| Fully understand    | 48.3          | 47.7  |
| <b>Total</b>        | 100.0         | 100.0 |
| <b>N</b>            | 172           | 1008  |

Total N = 1180

Table 2.4.6: Started Choose Safety Programme vs. how to measure risk levels involved in tasks

$$X^2(4) = 4.984, p = 0.289$$

|                     | Choose Safety |       |
|---------------------|---------------|-------|
|                     | Yes           | No    |
| Do not understand   | 21.7          | 27.6  |
| Understand a little | 26.5          | 22.5  |
| Somewhat understand | 21.7          | 23.9  |
| Mostly understand   | 15.7          | 15.4  |
| Fully understand    | 14.5          | 10.6  |
| <b>Total</b>        | 100.0         | 100.0 |
| <b>N</b>            | 166           | 1005  |

Total N = 1171

Table 2.4.7: Started Choose Safety Programme vs. what a safety statement is

$$X^2(4) = 6.268, p = 0.180$$

|                     | Choose Safety |       |
|---------------------|---------------|-------|
|                     | Yes           | No    |
| Do not understand   | 14.6          | 20.0  |
| Understand a little | 17.5          | 21.2  |
| Somewhat understand | 29.8          | 24.0  |
| Mostly understand   | 18.1          | 14.7  |
| Fully understand    | 19.9          | 20.1  |
| <b>Total</b>        | 100.0         | 100.0 |
| <b>N</b>            | 171           | 1005  |

Total N = 1176

Table 2.4.8: Started Choose Safety Programme vs. the role of the Health and Safety Authority in Ireland

$$X^2(4) = 0.467, p = 0.977$$

|                     | Choose Safety |       |
|---------------------|---------------|-------|
|                     | Yes           | No    |
| Do not understand   | 14.5          | 13.8  |
| Understand a little | 20.3          | 21.8  |
| Somewhat understand | 26.7          | 25.5  |
| Mostly understand   | 18.0          | 19.3  |
| Fully understand    | 20.3          | 19.6  |
| <b>Total</b>        | 100.0         | 100.0 |
| <b>N</b>            | 172           | 1009  |

Total N = 1181

Table 2.4.9: Started Choose Safety Programme vs. the role of the safety officer within the workplace

$$X^2(4) = 1.516, p = 0.824$$

|                            | Choose Safety |       |
|----------------------------|---------------|-------|
|                            | Yes           | No    |
| <b>Do not understand</b>   | 7.0           | 8.3   |
| <b>Understand a little</b> | 16.4          | 17.3  |
| <b>Somewhat understand</b> | 26.3          | 24.2  |
| <b>Mostly understand</b>   | 22.8          | 25.5  |
| <b>Fully understand</b>    | 27.5          | 24.7  |
| <b>Total</b>               | 100.0         | 100.0 |
| <b>N</b>                   | 171           | 1008  |

Total N = 1179

Table 2.4.10: Started Choose Safety Programme vs. the role of safety representative within the workplace

$\chi^2(4) = 3.261, p = 0.515$

|                            | Choose Safety |       |
|----------------------------|---------------|-------|
|                            | Yes           | No    |
| <b>Do not understand</b>   | 13.4          | 15.5  |
| <b>Understand a little</b> | 22.7          | 22.1  |
| <b>Somewhat understand</b> | 24.4          | 24.7  |
| <b>Mostly understand</b>   | 18.0          | 21.2  |
| <b>Fully understand</b>    | 21.5          | 16.6  |
| <b>Total</b>               | 100.0         | 100.0 |
| <b>N</b>                   | 172           | 1009  |

Total N = 1181

Table 2.4.11: Started Choose Safety Programme vs. Toxic / poison label

$\chi^2(1) = 6.462, p = 0.011$

|                           | Choose Safety |       |
|---------------------------|---------------|-------|
|                           | Yes           | No    |
| <b>Answered correctly</b> |               |       |
| <b>Yes</b>                | 80.0          | 70.2  |
| <b>No</b>                 | 20.0          | 29.8  |
| <b>Total</b>              | 100.0         | 100.0 |
| <b>N</b>                  | 160           | 943   |

Total N = 1103

Table 2.4.12: Started Choose Safety Programme vs. Environment label

$\chi^2(1) = 0.016, p = 0.899$

|                           | Choose Safety |       |
|---------------------------|---------------|-------|
|                           | Yes           | No    |
| <b>Answered correctly</b> |               |       |
| <b>Yes</b>                | 54.7          | 54.2  |
| <b>No</b>                 | 45.3          | 45.8  |
| <b>Total</b>              | 100.0         | 100.0 |
| <b>N</b>                  | 137           | 781   |

Total N = 918

Table 2.4.13: Started Choose Safety Programme vs. Corrosive label

$\chi^2(1) = 0.559, p = 0.455$

| Answered correctly | Choose Safety |       |
|--------------------|---------------|-------|
|                    | Yes           | No    |
| Yes                | 65.6          | 68.6  |
| No                 | 34.4          | 31.4  |
| <b>Total</b>       | 100.0         | 100.0 |
| <b>N</b>           | 151           | 845   |

Total N = 996

Table 2.4.14: Started Choose Safety Programme vs. Explosive / bomb label

$\chi^2(1) = 5.244, p = 0.022$

| Answered correctly | Choose Safety |       |
|--------------------|---------------|-------|
|                    | Yes           | No    |
| Yes                | 99.3          | 95.4  |
| No                 | 0.7           | 4.6   |
| <b>Total</b>       | 100.0         | 100.0 |
| <b>N</b>           | 151           | 861   |

Total N = 1012

Table 2.4.15: Started Choose Safety Programme vs. Harmful / irritant label

$\chi^2(1) = 3.974, p = 0.046$

| Answered correctly | Choose Safety |       |
|--------------------|---------------|-------|
|                    | Yes           | No    |
| Yes                | 51.3          | 41.5  |
| No                 | 48.7          | 58.5  |
| <b>Total</b>       | 100.0         | 100.0 |
| <b>N</b>           | 119           | 775   |

Total N = 894

Table 2.4.16: Started Choose Safety Programme vs. Oxidizing label

$\chi^2(1) = 0.319, p = 0.572$

| Answered correctly | Choose Safety |       |
|--------------------|---------------|-------|
|                    | Yes           | No    |
| Yes                | 36.4          | 39.7  |
| No                 | 63.6          | 60.3  |
| <b>Total</b>       | 100.0         | 100.0 |
| <b>N</b>           | 77            | 521   |

Total N = 598

Table 2.4.17: Started Choose Safety Programme vs. Flammable / Fire label

$\chi^2(1) = 0.112, p = 0.738$  (1 cell, 25%, has an expected count less than 5; minimum expected count is 3.43)

| Answered correctly | Choose Safety |       |
|--------------------|---------------|-------|
|                    | Yes           | No    |
| Yes                | 97.6          | 98.0  |
| No                 | 2.4           | 2.0   |
| <b>Total</b>       | 100.0         | 100.0 |
| <b>N</b>           | 165           | 989   |

Total N = 1154

Table 2.4.18: Started Choose Safety Programme vs. most workplace accidents happen at night  
 $\chi^2(1) = 2.925, p = 0.087$

| Answer          | Choose Safety |       |
|-----------------|---------------|-------|
|                 | Yes           | No    |
| True            | 19.7          | 14.6  |
| False (correct) | 80.3          | 85.4  |
| Total           | 100.0         | 100.0 |
| N               | 173           | 1008  |

Total N = 1181

Table 2.4.19: Started Choose Safety Programme vs. young workers aged under twenty get injured more often than other age groups

$\chi^2(1) = 11.051, p = 0.001$

| Answer         | Choose Safety |       |
|----------------|---------------|-------|
|                | Yes           | No    |
| True (correct) | 46.0          | 33.0  |
| False          | 54.0          | 67.0  |
| Total          | 100.0         | 100.0 |
| N              | 174           | 1007  |

Total N = 1181

Table 2.4.20: Started Choose Safety Programme vs. Falling, slipping, and tripping are the least common type of accident

$\chi^2(1) = 11.334, p = 0.001$

| Answer          | Choose Safety |       |
|-----------------|---------------|-------|
|                 | Yes           | No    |
| True            | 27.3          | 16.6  |
| False (correct) | 72.7          | 83.4  |
| Total           | 100.0         | 100.0 |
| N               | 172           | 1011  |

Total N = 1183

Table 2.4.21: Started Choose Safety Programme vs. Back damage is the most common injury in the workplace

$\chi^2(1) = 3.540, p = 0.060$

| Answer          | Choose Safety |       |
|-----------------|---------------|-------|
|                 | Yes           | No    |
| True (correct)) | 86.6          | 80.6  |
| False           | 13.4          | 19.4  |
| Total           | 100.0         | 100.0 |
| N               | 172           | 1005  |

Total N = 1177

Table 2.4.22: Started Choose Safety Programme vs. legally employers do not have to provide a safe working environment for workers

$\chi^2(1) = 6.766, p = 0.009$

| Answer          | Choose Safety |       |
|-----------------|---------------|-------|
|                 | Yes           | No    |
| True            | 14.7          | 8.4   |
| False (correct) | 85.3          | 91.6  |
| Total           | 100.0         | 100.0 |
| N               | 170           | 997   |

Total N = 1167

Table 2.4.23: Started Choose Safety Programme vs. manual handling causes more than 1/3 of accidents in the workplace

$\chi^2(1) = 0.027, p = 0.869$

| Answer         | Choose Safety |       |
|----------------|---------------|-------|
|                | Yes           | No    |
| True (correct) | 82.9          | 83.5  |
| False          | 17.1          | 16.5  |
| Total          | 100.0         | 100.0 |
| N              | 170           | 979   |

Total N = 1149

Table 2.4.24: Started Choose Safety Programme vs. most fires occur at home

$\chi^2(1) = 0.800, p = 0.371$

| Answer         | Choose Safety |       |
|----------------|---------------|-------|
|                | Yes           | No    |
| True (correct) | 54.7          | 51.0  |
| False          | 45.3          | 49.0  |
| Total          | 100.0         | 100.0 |
| N              | 170           | 1002  |

Total N = 1172

Table 2.4.25: Started Choose Safety Programme vs. Male workers get injured more often than female workers

$\chi^2(1) = 6.380, p = 0.012$

| Answer         | Choose Safety |       |
|----------------|---------------|-------|
|                | Yes           | No    |
| True (correct) | 66.5          | 56.1  |
| False          | 33.5          | 43.9  |
| Total          | 100.0         | 100.0 |
| N              | 170           | 1005  |

Total N = 1175

Table 2.4.26: Started Choose Safety Programme vs. Bullying in the workplace is a health and safety issue

$\chi^2(1) = 0.113, p = 0.737$

| Answer         | Choose Safety |       |
|----------------|---------------|-------|
|                | Yes           | No    |
| True (correct) | 75.4          | 76.6  |
| False          | 24.6          | 23.4  |
| Total          | 100.0         | 100.0 |
| N              | 171           | 1005  |

Total N = 1176

Table 2.4.27: Started Choose Safety Programme vs. employers can do nothing to reduce stress at work

$\chi^2(1) = 1.172, p = 0.279$

| Answer          | Choose Safety |       |
|-----------------|---------------|-------|
|                 | Yes           | No    |
| True            | 13.3          | 10.5  |
| False (correct) | 86.7          | 89.5  |
| Total           | 100.0         | 100.0 |
| N               | 173           | 1008  |

Total N = 1181

Table 2.4.28: Started Choose Safety Programme vs. in accidents involving fire most deaths are from burns

$\chi^2(1) = 3.870, p = 0.049$

| Answer          | Choose Safety |       |
|-----------------|---------------|-------|
|                 | Yes           | No    |
| True            | 39.8          | 32.0  |
| False (correct) | 60.2          | 68.0  |
| Total           | 100.0         | 100.0 |
| N               | 166           | 1000  |

Total N = 1166

Table 2.4.29: Started Choose Safety Programme vs. over 1 million work days are lost each year due to workplace injuries or illnesses

$\chi^2(1) = 0.047, p = 0.829$

| Answer         | Choose Safety |       |
|----------------|---------------|-------|
|                | Yes           | No    |
| True (correct) | 70.1          | 70.9  |
| False          | 29.9          | 29.1  |
| Total          | 100.0         | 100.0 |
| N              | 167           | 996   |

Total N = 1163

## **BEHAVIOUR**

Started Choose Safety Programme vs. I wear a seat belt when I am a passenger in a car

$\chi^2(4) = 8.305, p = 0.081$  (3 cells, 30%, have expected counts less than 5; minimum expected count is 0.44)

|           | Yes   | No    |
|-----------|-------|-------|
| Always    | 79.8  | 85.7  |
| Often     | 11.0  | 9.5   |
| Sometimes | 8.1   | 3.7   |
| Seldom    | 1.2   | 0.9   |
| Never     | 0.0   | 0.3   |
| Total     | 100.0 | 100.0 |
| N         | 173   | 1011  |

Total N = 1184

Started Choose Safety Programme vs. I wear protective equipment when running a lawn mower

$\chi^2(4) = 1.124, p = 0.890$

|           | Yes   | No    |
|-----------|-------|-------|
| Always    | 9.9   | 8.8   |
| Often     | 5.8   | 6.6   |
| Sometimes | 9.4   | 11.7  |
| Seldom    | 14.0  | 13.5  |
| Never     | 60.8  | 59.4  |
| Total     | 100.0 | 100.0 |
| N         | 171   | 990   |

Total N = 1161

Started Choose Safety Programme vs. I wear a helmet when riding a bicycle  
 $\chi^2(4) = 5.042, p = 0.283$

|           | Yes   | No    |
|-----------|-------|-------|
| Always    | 7.6   | 5.7   |
| Often     | 2.3   | 3.9   |
| Sometimes | 6.4   | 9.6   |
| Seldom    | 8.7   | 11.4  |
| Never     | 75.0  | 69.5  |
| Total     | 100.0 | 100.0 |
| N         | 172   | 1003  |

Total N = 1175

Started Choose Safety Programme vs. I wear safety glasses when performing jobs that could lead to eye injuries  
 $\chi^2(4) = 3.353, p = 0.501$

|           | Yes   | No    |
|-----------|-------|-------|
| Always    | 36.6  | 32.3  |
| Often     | 19.2  | 22.9  |
| Sometimes | 18.6  | 20.1  |
| Seldom    | 8.1   | 10.2  |
| Never     | 17.4  | 14.5  |
| Total     | 100.0 | 100.0 |
| N         | 172   | 997   |

Total N = 1169

Started Choose Safety Programme vs. I regularly cycle after dark without reflective clothing  
 $\chi^2(4) = 17.182, p = 0.001$

|           | Yes   | No    |
|-----------|-------|-------|
| Always    | 12.4  | 6.9   |
| Often     | 8.2   | 5.2   |
| Sometimes | 18.8  | 12.4  |
| Seldom    | 10.0  | 16.0  |
| Never     | 50.6  | 59.5  |
| Total     | 100.0 | 100.0 |
| N         | 170   | 995   |

Total N = 1165

## ATTITUDE

Table 4.3.0: Started Choose Safety Programme vs. it is ok to cut corners in order to get the job done quickly  
 $\chi^2(4) = 2.503, p = 0.644$  (1 cell, 10%, has an expected count less than 5; minimum expected count is 4.52)

|                           | Yes   | No    |
|---------------------------|-------|-------|
| Strongly agree            | 2.9   | 2.6   |
| Agree                     | 7.6   | 7.5   |
| Neither agree or disagree | 19.2  | 19.1  |
| Disagree                  | 34.9  | 40.5  |
| Strongly disagree         | 35.5  | 30.3  |
| Total                     | 100.0 | 100.0 |
| N                         | 172   | 1008  |

Total N = 1180



Table 4.3.1: Started Choose Safety Programme vs. protective clothing is not necessary if it slows down the task

$\chi^2(4) = 8.185, p = 0.085$  (1 cell, 10%, has an expected count less than 5; minimum expected count is 3.64)

|                           | Yes          | No           |
|---------------------------|--------------|--------------|
| Strongly agree            | 2.9          | 2.0          |
| Agree                     | 7.0          | 4.5          |
| Neither agree or disagree | 13.5         | 8.3          |
| Disagree                  | 40.4         | 43.8         |
| Strongly disagree         | 36.3         | 41.4         |
| <b>Total</b>              | <b>100.0</b> | <b>100.0</b> |
| <b>N</b>                  | <b>171</b>   | <b>1002</b>  |

Total N = 1173

Table 4.3.2: Started Choose Safety Programme vs. it is ok to drive above the speed limit if you are in a hurry

$\chi^2(4) = 1.182, p = 0.881$  (1 cell, 10%, has an expected count less than 5; minimum expected count is 4.58)

|                           | Yes          | No           |
|---------------------------|--------------|--------------|
| Strongly agree            | 3.4          | 2.5          |
| Agree                     | 4.6          | 4.3          |
| Neither agree or disagree | 11.5         | 12.6         |
| Disagree                  | 31.0         | 28.7         |
| Strongly disagree         | 49.4         | 51.9         |
| <b>Total</b>              | <b>100.0</b> | <b>100.0</b> |
| <b>N</b>                  | <b>174</b>   | <b>1005</b>  |

Total N = 1179

Table 4.3.3: Started Choose Safety Programme vs. waste and emissions from industry are ok as long as they don't hard the majority of people

$\chi^2(4) = 4.457, p = 0.348$  (1 cell, 10%, has an expected count less than 5; minimum expected count is 3.36)

|                           | Yes          | No           |
|---------------------------|--------------|--------------|
| Strongly agree            | 2.9          | 1.8          |
| Agree                     | 7.0          | 4.9          |
| Neither agree or disagree | 12.3         | 11.5         |
| Disagree                  | 35.7         | 32.2         |
| Strongly disagree         | 42.1         | 49.5         |
| <b>Total</b>              | <b>100.0</b> | <b>100.0</b> |
| <b>N</b>                  | <b>171</b>   | <b>999</b>   |

Total N = 1170

Table 4.3.4: Started Choose Safety Programme vs. it is ok to disregard safety procedures if everyone else is doing so

$\chi^2(4) = 7.174, p = 0.127$  (1 cell, 10%, has an expected count less than 5; minimum expected count is 1.92)

|                           | Yes          | No           |
|---------------------------|--------------|--------------|
| Strongly agree            | 2.3          | 0.9          |
| Agree                     | 2.3          | 3.1          |
| Neither agree or disagree | 11.6         | 7.2          |
| Disagree                  | 35.3         | 39.3         |
| Strongly disagree         | 48.6         | 49.4         |
| <b>Total</b>              | <b>100.0</b> | <b>100.0</b> |
| <b>N</b>                  | <b>173</b>   | <b>999</b>   |

Total N = 1172

Table 4.3.5: Started Choose Safety Programme vs. it is ok for a boss to shout at workers in order to get the job done quickly

$X^2(4) = 4.822, p = 0.306$

|                           | Yes   | No    |
|---------------------------|-------|-------|
| Strongly agree            | 9.3   | 6.2   |
| Agree                     | 19.2  | 15.2  |
| Neither agree or disagree | 18.6  | 21.2  |
| Disagree                  | 23.3  | 24.0  |
| Strongly disagree         | 29.7  | 33.4  |
| Total                     | 100.0 | 100.0 |
| N                         | 172   | 1003  |

Total N = 1175

Table 4.3.6: Started Choose Safety Programme vs. I am a safety conscious person

$X^2(4) = 7.403, p = 0.116$  (1 cell, 10%, has an expected count less than 5; minimum expected count is 4.25)

|                           | Yes   | No    |
|---------------------------|-------|-------|
| Strongly agree            | 14.0  | 11.2  |
| Agree                     | 48.3  | 47.4  |
| Neither agree or disagree | 22.7  | 31.0  |
| Disagree                  | 12.2  | 8.1   |
| Strongly disagree         | 2.9   | 2.4   |
| Total                     | 100.0 | 100.0 |
| N                         | 172   | 1001  |

Total N = 1173

Table 4.3.7: Started Choose Safety Programme vs. my attitudes to safety keep me safe from accidents

$X^2(4) = 1.136, p = 0.889$  (1 cell, 10%, has an expected count less than 5; minimum expected count is 2.47)

|                           | Yes   | No    |
|---------------------------|-------|-------|
| Strongly agree            | 13.5  | 12.2  |
| Agree                     | 50.0  | 50.0  |
| Neither agree or disagree | 25.9  | 28.5  |
| Disagree                  | 9.4   | 7.8   |
| Strongly disagree         | 1.2   | 1.5   |
| Total                     | 100.0 | 100.0 |
| N                         | 170   | 1000  |

Total N = 1170

Table 4.3.8: Started Choose Safety Programme vs. safety is primarily a human problem

$X^2(4) = 3.524, p = 0.474$  (1 cell, 10%, has a count less than 5; minimum expected count is 4.26)

|                           | Yes   | No    |
|---------------------------|-------|-------|
| Strongly agree            | 14.6  | 12.6  |
| Agree                     | 48.0  | 43.3  |
| Neither agree or disagree | 26.3  | 30.0  |
| Disagree                  | 8.2   | 11.6  |
| Strongly disagree         | 2.9   | 2.4   |
| Total                     | 100.0 | 100.0 |
| N                         | 171   | 992   |

Total N = 1163

Table 4.3.9: Started Choose Safety Programme vs. to reduce accidents we have to change people's safety behaviour

$X^2(4) = 2.981, p = 0.561$  (3 cells, 30%, have an expected count less than 5; minimum expected count is 0.57)

|                           | Yes          | No           |
|---------------------------|--------------|--------------|
| Strongly agree            | 30.5         | 36.8         |
| Agree                     | 56.9         | 50.9         |
| Neither agree or disagree | 10.2         | 9.9          |
| Disagree                  | 1.8          | 2.0          |
| Strongly disagree         | 0.6          | 0.3          |
| <b>Total</b>              | <b>100.0</b> | <b>100.0</b> |
| <b>N</b>                  | <b>167</b>   | <b>996</b>   |

Total N = 1163

Table 4.3.10: Started Choose Safety Programme vs. parents can have a direct effect on the behaviour of their children as it relates to safety practices

$X^2(4) = 3.756, p = 0.440$  (1 cell, 10%, has an expected count less than 5; minimum expected count is 1.93)

|                           | Yes          | No           |
|---------------------------|--------------|--------------|
| Strongly agree            | 33.1         | 35.5         |
| Agree                     | 49.4         | 46.9         |
| Neither agree or disagree | 15.1         | 12.9         |
| Disagree                  | 1.2          | 3.7          |
| Strongly disagree         | 1.2          | 1.1          |
| <b>Total</b>              | <b>100.0</b> | <b>100.0</b> |
| <b>N</b>                  | <b>172</b>   | <b>986</b>   |

Total N = 1158

Table 4.3.11: Started Choose Safety Programme vs. everyone should receive safety-related instructions before participating in a new activity

$X^2(4) = 2.264, p = 0.687$  (1 cell, 10%, has an expected count less than 5; minimum expected count is 1.31)

|                           | Yes          | No           |
|---------------------------|--------------|--------------|
| Strongly agree            | 33.5         | 38.3         |
| Agree                     | 50.6         | 46.3         |
| Neither agree or disagree | 12.9         | 11.3         |
| Disagree                  | 2.4          | 3.3          |
| Strongly disagree         | 0.6          | 0.8          |
| <b>Total</b>              | <b>100.0</b> | <b>100.0</b> |
| <b>N</b>                  | <b>170</b>   | <b>996</b>   |

Total N = 1166

Table 4.3.12: Started Choose Safety Programme vs. accidents are, for the most part, an “Act of God”

$X^2(4) = 4.036, p = 0.401$

|                           | Yes          | No           |
|---------------------------|--------------|--------------|
| Strongly agree            | 6.0          | 3.1          |
| Agree                     | 8.3          | 7.1          |
| Neither agree or disagree | 29.8         | 29.6         |
| Disagree                  | 29.8         | 31.0         |
| Strongly disagree         | 26.2         | 29.1         |
| <b>Total</b>              | <b>100.0</b> | <b>100.0</b> |
| <b>N</b>                  | <b>168</b>   | <b>989</b>   |

Total N = 1157

Table 4.3.13: Started Choose Safety Programme vs. it is simply a matter of bad luck when someone gets injured

$X^2(4) = 4.564, p = 0.335$

|                           | Yes   | No    |
|---------------------------|-------|-------|
| Strongly agree            | 7.1   | 5.5   |
| Agree                     | 14.8  | 10.3  |
| Neither agree or disagree | 24.3  | 23.8  |
| Disagree                  | 35.5  | 38.4  |
| Strongly disagree         | 18.3  | 22.1  |
| Total                     | 100.0 | 100.0 |
| N                         | 169   | 993   |

Total N = 1162

Table 4.3.14: Started Choose Safety Programme vs. most people who never have accidents are “just lucky”

$\chi^2(4) = 7.096, p = 0.131$

|                           | Yes   | No    |
|---------------------------|-------|-------|
| Strongly agree            | 7.7   | 6.1   |
| Agree                     | 21.3  | 17.2  |
| Neither agree or disagree | 27.8  | 22.6  |
| Disagree                  | 30.2  | 36.3  |
| Strongly disagree         | 13.0  | 17.8  |
| Total                     | 100.0 | 100.0 |
| N                         | 169   | 983   |

Total N = 1152

Table 4.3.15: Started Choose Safety Programme vs. when buying a new product, reading safety-related instructions is important

$\chi^2(4) = 2.117, p = 0.714$  (1 cell, 10%, has an expected count less than 5; minimum expected count is 2.76)

|                           | Yes   | No    |
|---------------------------|-------|-------|
| Strongly agree            | 24.0  | 26.3  |
| Agree                     | 44.3  | 47.2  |
| Neither agree or disagree | 21.0  | 17.9  |
| Disagree                  | 9.0   | 6.9   |
| Strongly disagree         | 1.8   | 1.6   |
| Total                     | 100.0 | 100.0 |
| N                         | 167   | 981   |

Total N = 1148

Table 4.3.16: Started Choose Safety Programme vs. parents should stick to the recommended age range when purchasing toys

$\chi^2(4) = 0.657, p = 0.957$

|                           | Yes   | No    |
|---------------------------|-------|-------|
| Strongly agree            | 16.6  | 14.7  |
| Agree                     | 36.7  | 36.0  |
| Neither agree or disagree | 28.4  | 29.7  |
| Disagree                  | 14.2  | 14.6  |
| Strongly disagree         | 4.1   | 5.0   |
| Total                     | 100.0 | 100.0 |
| N                         | 169   | 986   |

Total N = 1155

Table 4.3.17: Started Choose Safety Programme vs. there is a relationship between human behaviour and accident rates

$\chi^2(4) = 6.940, p = 0.139$  (1 cell, 10%, has an expected count less than 5; minimum expected count is 1.77)

|                           | Yes   | No    |
|---------------------------|-------|-------|
| Strongly agree            | 15.4  | 18.2  |
| Agree                     | 42.0  | 46.5  |
| Neither agree or disagree | 32.5  | 29.1  |
| Disagree                  | 9.5   | 5.1   |
| Strongly disagree         | 0.6   | 1.1   |
| Total                     | 100.0 | 100.0 |
| N                         | 169   | 974   |

Total N = 1143

Table 4.3.18: Started Choose Safety Programme vs. how a person is feeling has an effect on the likelihood of an accident occurring

$X^2(4) = 0.563$ ,  $p = 0.967$  (1 cell, 10%, has an expected count less than 5; minimum expected count is 1.45)

|                           | Yes   | No    |
|---------------------------|-------|-------|
| Strongly agree            | 20.4  | 20.0  |
| Agree                     | 50.3  | 51.1  |
| Neither agree or disagree | 22.8  | 21.1  |
| Disagree                  | 6.0   | 6.9   |
| Strongly disagree         | 0.6   | 0.9   |
| Total                     | 100.0 | 100.0 |
| N                         | 167   | 981   |

Total N = 1148

Table 4.3.19: Started Choose Safety Programme vs. some individuals have a natural tendency to take risks

$X^2(4) = 4.215$ ,  $p = 0.378$  (1 cell, 10%, has an expected count less than 5; minimum expected count is 1.16)

|                           | Yes   | No    |
|---------------------------|-------|-------|
| Strongly agree            | 22.8  | 26.2  |
| Agree                     | 59.3  | 57.0  |
| Neither agree or disagree | 15.0  | 12.2  |
| Disagree                  | 1.8   | 4.0   |
| Strongly disagree         | 1.2   | 0.6   |
| Total                     | 100.0 | 100.0 |
| N                         | 167   | 984   |

Total N = 1151

Table 4.3.20: Started Choose Safety Programme vs. accident-prone people have little control over the number of accidents in which they are involved

$X^2(4) = 10.964$ ,  $p = 0.027$

|                           | Yes   | No    |
|---------------------------|-------|-------|
| Strongly agree            | 14.2  | 7.6   |
| Agree                     | 27.2  | 23.2  |
| Neither agree or disagree | 26.6  | 31.1  |
| Disagree                  | 24.9  | 30.4  |
| Strongly disagree         | 7.1   | 7.8   |
| Total                     | 100.0 | 100.0 |
| N                         | 169   | 979   |

Total N = 1148

Table 4.3.21: Started Choose Safety Programme vs. driving a car while drunk is an individual choice

$X^2(4) = 5.748$ ,  $p = 0.219$

|                                  | <b>Yes</b> | <b>No</b> |
|----------------------------------|------------|-----------|
| <b>Strongly agree</b>            | 31.8       | 34.5      |
| <b>Agree</b>                     | 27.6       | 30.5      |
| <b>Neither agree or disagree</b> | 11.8       | 14.2      |
| <b>Disagree</b>                  | 11.2       | 7.4       |
| <b>Strongly disagree</b>         | 17.6       | 13.4      |
| <b>Total</b>                     | 100.0      | 100.0     |
| <b>N</b>                         | 170        | 984       |

Total N = 1154

Table 4.3.22: Started Choose Safety Programme vs. seat belt use is only important for long trips while driving at high speed on motorways

$\chi^2(4) = 12.650, p = 0.013$

|                                  | <b>Yes</b> | <b>No</b> |
|----------------------------------|------------|-----------|
| <b>Strongly agree</b>            | 9.4        | 4.8       |
| <b>Agree</b>                     | 8.2        | 4.1       |
| <b>Neither agree or disagree</b> | 5.9        | 6.0       |
| <b>Disagree</b>                  | 16.5       | 17.1      |
| <b>Strongly disagree</b>         | 60.0       | 68.1      |
| <b>Total</b>                     | 100.0      | 100.0     |
| <b>N</b>                         | 170        | 987       |

Total N = 1157

Table 4.3.23: Started Choose Safety Programme vs. smoking in bed should be strictly forbidden

$\chi^2(4) = 2.453, p = 0.653$

|                                  | <b>Yes</b> | <b>No</b> |
|----------------------------------|------------|-----------|
| <b>Strongly agree</b>            | 43.3       | 43.9      |
| <b>Agree</b>                     | 16.4       | 19.5      |
| <b>Neither agree or disagree</b> | 24.0       | 19.3      |
| <b>Disagree</b>                  | 7.0        | 7.6       |
| <b>Strongly disagree</b>         | 9.4        | 9.8       |
| <b>Total</b>                     | 100.0      | 100.0     |
| <b>N</b>                         | 171        | 991       |

Total N = 1162

Table 4.3.24: Started Choose Safety Programme vs. I am well-informed about how to take care of my safety and health in the workplace

$\chi^2(5) = 6.339, p = 0.275$

|                                  | <b>Yes</b> | <b>No</b> |
|----------------------------------|------------|-----------|
| <b>Strongly agree</b>            | 26.0       | 18.3      |
| <b>Agree</b>                     | 41.6       | 40.7      |
| <b>Neither agree or disagree</b> | 14.9       | 19.5      |
| <b>Disagree</b>                  | 7.1        | 9.0       |
| <b>Strongly disagree</b>         | 5.2        | 6.2       |
| <b>Not relevant to me</b>        | 5.2        | 6.2       |
| <b>Total</b>                     | 100.0      | 100.0     |
| <b>N</b>                         | 154        | 835       |

Total N = 989

Table 4.3.25: Started Choose Safety Programme vs. I have enough resources available to stay safe in my workplace

$\chi^2(5) = 3.437, p = 0.633$

|                           | Yes          | No           |
|---------------------------|--------------|--------------|
| Strongly agree            | 20.6         | 17.9         |
| Agree                     | 42.6         | 45.8         |
| Neither agree or disagree | 17.4         | 19.1         |
| Disagree                  | 8.4          | 5.8          |
| Strongly disagree         | 7.1          | 6.0          |
| Not relevant to me        | 3.9          | 5.5          |
| <b>Total</b>              | <b>100.0</b> | <b>100.0</b> |
| <b>N</b>                  | <b>155</b>   | <b>834</b>   |

Total N = 989

Table 4.3.26: Started Choose Safety Programme vs. having a safe and healthy workplace makes employees happier

$X^2(4) = 3.020$ ,  $p = 0.554$  (3 cells, 30%, have an expected count less than 5; minimum expected count is 0.73)

|                           | Yes          | No           |
|---------------------------|--------------|--------------|
| Strongly agree            | 49.4         | 49.0         |
| Agree                     | 46.4         | 43.8         |
| Neither agree or disagree | 3.0          | 5.6          |
| Disagree                  | 1.2          | 1.1          |
| Strongly disagree         | 0.0          | 0.5          |
| <b>Total</b>              | <b>100.0</b> | <b>100.0</b> |
| <b>N</b>                  | <b>168</b>   | <b>978</b>   |

Total N = 1146

Table 4.3.27: Started Choose Safety Programme vs. having a safe and healthy workplace makes employees healthier

$X^2(4) = 2.713$ ,  $p = 0.607$  (2 cells, 20%, have an expected count less than 5; minimum expected count is 0.59)

|                           | Yes          | No           |
|---------------------------|--------------|--------------|
| Strongly agree            | 39.1         | 41.3         |
| Agree                     | 47.3         | 41.9         |
| Neither agree or disagree | 10.7         | 12.7         |
| Disagree                  | 2.4          | 3.7          |
| Strongly disagree         | 0.6          | 0.3          |
| <b>Total</b>              | <b>100.0</b> | <b>100.0</b> |
| <b>N</b>                  | <b>169</b>   | <b>975</b>   |

Total N = 1144

Table 4.3.28: Started Choose Safety Programme vs. having a safe and healthy workplace increases costs

$X^2(4) = 1.115$ ,  $p = 0.892$

|                           | Yes          | No           |
|---------------------------|--------------|--------------|
| Strongly agree            | 16.7         | 15.3         |
| Agree                     | 32.1         | 33.7         |
| Neither agree or disagree | 33.9         | 34.8         |
| Disagree                  | 13.1         | 13.3         |
| Strongly disagree         | 4.2          | 2.9          |
| <b>Total</b>              | <b>100.0</b> | <b>100.0</b> |
| <b>N</b>                  | <b>168</b>   | <b>976</b>   |

Total N = 1144

Table 4.3.29: Started Choose Safety Programme vs. having a safe and healthy workplace makes employees work harder

$X^2(4) = 2.726$ ,  $p = 0.605$

|                           | Yes   | No    |
|---------------------------|-------|-------|
| Strongly agree            | 14.2  | 13.4  |
| Agree                     | 32.0  | 27.5  |
| Neither agree or disagree | 36.1  | 38.1  |
| Disagree                  | 16.0  | 17.5  |
| Strongly disagree         | 1.8   | 3.5   |
| Total                     | 100.0 | 100.0 |
| N                         | 169   | 973   |

Total N = 1142

Table 4.3.30: Started Choose Safety Programme vs. having a safe and healthy workplace causes employees to complain

$X^2(4) = 3.350$ ,  $p = 0.501$  (1 cell, 10%, has an expected count less than 5; minimum expected count is 3.06)

|                           | Yes   | No    |
|---------------------------|-------|-------|
| Strongly agree            | 1.8   | 1.8   |
| Agree                     | 7.2   | 4.2   |
| Neither agree or disagree | 15.1  | 14.7  |
| Disagree                  | 50.0  | 49.9  |
| Strongly disagree         | 25.9  | 29.3  |
| Total                     | 100.0 | 100.0 |
| N                         | 166   | 973   |

Total N = 1139

Table 4.3.31: Started Choose Safety Programme vs. having a safe and healthy workplace takes too much time

$X^2(4) = 7.694$ ,  $p = 0.103$

|                           | Yes   | No    |
|---------------------------|-------|-------|
| Strongly agree            | 5.4   | 2.8   |
| Agree                     | 8.4   | 7.6   |
| Neither agree or disagree | 27.5  | 22.2  |
| Disagree                  | 34.1  | 43.1  |
| Strongly disagree         | 24.6  | 24.4  |
| Total                     | 100.0 | 100.0 |
| N                         | 167   | 973   |

Total N = 1140

Table 4.3.32: Started Choose Safety Programme vs. having a safe and healthy workplace increases quality of products

$X^2(4) = 4.528$ ,  $p = 0.339$  (1 cell, 10%, has a count less than 5; minimum expected count is 4.10)

|                           | Yes   | No    |
|---------------------------|-------|-------|
| Strongly agree            | 26.9  | 21.6  |
| Agree                     | 41.9  | 40.8  |
| Neither agree or disagree | 21.0  | 25.9  |
| Disagree                  | 9.0   | 9.1   |
| Strongly disagree         | 1.2   | 2.7   |
| Total                     | 100.0 | 100.0 |
| N                         | 167   | 974   |

Total N = 1141

Table 4.3.33: Started Choose Safety Programme vs. having a safe and healthy workplace reduces business profit

$X^2(4) = 5.614$ ,  $p = 0.230$



|                                  | <b>Yes</b> | <b>No</b> |
|----------------------------------|------------|-----------|
| <b>Strongly agree</b>            | 8.9        | 5.5       |
| <b>Agree</b>                     | 13.7       | 10.2      |
| <b>Neither agree or disagree</b> | 25.6       | 30.3      |
| <b>Disagree</b>                  | 33.9       | 36.1      |
| <b>Strongly disagree</b>         | 17.9       | 17.9      |
| <b>Total</b>                     | 100.0      | 100.0     |
| <b>N</b>                         | 168        | 978       |

Total N = 1146