

ANALYSIS OF CONSTRUCTION SITE SAFETY EDUCATION DEVELOPMENTS IN NEW ZEALAND: WHERE TO FROM HERE?

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Abstract

This paper discusses the New Zealand approach to developing an educational package in construction safety. As a case study, it will follow the development of a level 3 certificate programme by Unitec New Zealand and Site Safe New Zealand.

This paper describes the evolution of the Certificate in Construction Site Safety, a responsive programme developed through a consortium of construction companies, and a partnership between Site Safe and Unitec. The development of course material to meet the needs of the intended audience, goals achieved, academic quality management issues, and reflections on the success achieved are analysed.

Further discussed is the future of this educational package and delivery methodology. Having just completed the first year of operation and with students graduating in September 2006, a review of Government and private funding options and the progression for the package is surmised. In particular, conflicts between Government funding of safety courses and the legislative requirements for safe work sites highlight the continual difficulties faced offering academic programmes on site safety.

Finally the paper attempts to align the operation and delivery of construction safety education and training with those taking place in Australia, and concludes with a few possible pathways for the future.

Keywords

Site safety, construction safety, safety education

Introduction

This paper will outline the health and safety requirements historically from 1992 to today, following the changes in health and safety management from one of central governance to that of self governance. Running alongside of this timeline, the authors trace safety records and training programmes associated with the construction industry in New Zealand. Comparisons are made that training and culture development within the industry have had an impact on improving the fatality rate against a rising population in the construction industry. The paper then goes on to discuss the inherent funding difficulties that health and safety training in the construction industry is experiencing and outlines that health and safety training and education in New Zealand is primarily the responsibility of the industry rather than the national Government. In conclusion, comparisons are made between the Australian and New Zealand site safety training models, particularly in funding and delivery of site safety training programmes. Unitec New Zealand, in collaboration with Site Safe New Zealand, offer a Certificate in Construction Site Safety, particularly for the construction industry in New Zealand. In response to the difficulties experienced in funding this programme for delivery nation-wide, possible pathways for future directions are explored.

Evolution Response

In 1992 the New Zealand Government introduced legislation that would change safe working practice from that of Government lead compliance to that of industry lead practice. The Health and Safety in Employment Act 1992, introduced in October 1992 was, in itself, a response from the Government to address the perceived high death rate in Industrial places and premises. According to Statistics New Zealand the death count in Industrial places and premises was nine in 1988 (Department of Statistics, 1992) However, these statistics also show a marked increase in the rate of deaths on industrial places and premises to 11 in 1992 and 12 in 1993 (Statistics New Zealand, 1996). Furthermore, from the period between 1992 and 1999 the death rates in the Industrial places and premises remained at an average of 13.13 deaths per year (Statistics New Zealand, 1996; 2000; 2004a).

Prior to 1992, compliance of workplace safety was managed and enforced by Department of Labour Inspectors. Roving inspectors would randomly visit places of work, inspect them for safe work practice, and make recommendations or requirements of a place of work that address their concerns. In essence, this was a safety regime that generally managed safety concerns, many after accidents occurred rather than a focus on prevention. The ambulance at the bottom of a cliff rather than a safety fence at the top! The Health and Safety in Employment Act addressed the fence at the top of the cliff. The object of the Act was to recognise “that successful management of health and safety issues is best achieved through good faith co-operation in the place of work and, in particular, through the input of the persons doing the work” (Health and Safety in Employment Act, 1992, Part 1, Section 5f). Therefore, the management of site safety is the responsibility of everyone within the workplace.

Under the Health and Safety in Employment Act, employers and employees are responsible for the development and management of a safe working environment. However, coming from a regime of an external safety management into that of self governance creates its own dilemmas. The Act requires a safety plan for every business site. It also requires all employers and employees to identify and manage hazards within their place of work (Health and Safety in Employment Act, 1992). In essence, companies within New Zealand were still struggling with the implementation of the Act five years after the introduction of the Act. Wallis and Dryson (2002) state that only 44 percent of engineering companies in New Zealand had “undertaken the most fundamental step of hazard identification, a legislative requirement and the framework upon which self-management

occurs” (p. 307). Furthermore, they state that 68 percent of the 299 enterprises surveyed had no training in the implementation of the Health and Safety Act. In their conclusion, Wallis and Dryson (2002) state “that self regulation of small New Zealand enterprises has not been a success” (p. 308).

In conclusion, post 1992, all places of work and the personnel within these were responsible for the development and management of health and safety aspects of their business. Furthermore, they were also responsible for training and informing their personnel so that they are able to effectively manage the requirements of the Health and Safety in Employment Act. Clearly, reading the statistical data on workplace deaths during the period from 1993 to 1999, and the research undertaken by Wallis and Dryson, training aspects were inadequately preparing personnel for the task of workplace health and safety management.

Site Safety Training

With support from major construction companies in New Zealand, Site Safe New Zealand was established in 1999 as “an independent, not-for-profit industry wide organisation whose aim is to promote improvements in the health and safety practices of the construction industry” (Site Safe New Zealand, 2004, About Us). Its establishment as a provider of training in construction site safety was endorsed by the official launch of the organisation by the then Prime Minister of New Zealand, the Right Honourable Jenny Shipley (Site Safe New Zealand, 2004).

In the early years of Site Safe New Zealand, they, in consultation with their ‘Heads of Agreement’ partners established a ‘construction passport’ programme (similar to the Australian green card). Instead of an individual company, or construction site, performing site safety training, Site Safe initiated a programme where employees on construction sites were trained in construction site safe practice. On completion, they received a passport. Site Safe New Zealand member construction companies would only allow workers onto their site when a valid passport, with photo identification, was produced. This was the start of formal site safety training, aimed at helping to address the safety management requirements of the Health and Safety in Employment Act.

Training construction employees for safe workplace practices is one thing, developing training packages that meet the needs of many of the practitioners in the construction field throughout New Zealand is another. In order to support the development of training packages, Site Safe New Zealand and Unitec New Zealand formed an alliance that would provide academic support to the development of training packages.

During the period between 2002 and 2005, the death rate in construction related industries remains at an average of 13 deaths per year, which is similar to that of the period between 1992 and 1999. However the number of personnel active in the industry since 2002 has risen by 28 percent, which indicates a falling death rate per one thousand personnel. (Statistics New Zealand, 2003; 2004b; 2005; 2006).

Unfortunately, the statistics provided by Statistics New Zealand between 1992 and 2005 are not consistent in format, reporting modes, or industry description. Therefore, comparisons of death rates per one thousand personnel cannot be made prior to 2003. Furthermore, Statistics New Zealand’s closest description to the construction industry prior to 2000 was ‘Industrial places and premises’ whereas post 2000 ‘construction’ is a defined unit. Despite these irregularities in data presentation, it could be construed that an increase in site safe training within the construction industry has resulted in a reduction of deaths associated with workplace practice. This theory is endorsed by figures released by the New Zealand Construction Industry Council (NZCIC). NZCIC

states that the total injury rate, not death rate, in the construction industry in 1995 was nearly fifty per one thousand workers, reducing to thirty injuries per one thousand workers in 2004 (NZCIC, 2005).

The NZCIC states, a strategy for 2005 to 2010, is to “promote the inclusion of health and safety competencies in all relevant qualifications, licensing and registration standards” (NZCIC, 2005, p.2).

Educational Response

A decision was made to tailor educational packages with an experienced educational provider which would create a pathway for a new safety professional, to service the new legislation and safety requirements now demanded by the updated standards.

Unitec New Zealand, based in Auckland, had a well established trade training Institute in the Unitec Applied Technology Institute (UATI). This is the largest provider of trade training in New Zealand. Unitec New Zealand established an alliance with Site Safe to develop these unique educational packages.

Site Safe New Zealand and Unitec New Zealand offered for the first time a forty credit academic programme that addresses the educational requirements of health and safety management in the construction industry. Through a collaborative arrangement, the Certificate in Construction Site Safety programme (level three, forty credits) was designed to address the two main components of safety in the industry. Firstly, it addresses the main area of training for personnel in the industry that enables them to work in and maintain a safe working environment. Secondly, it develops leadership skills in construction site personnel and management that will, in the long-term, create a safe working practice culture within the industry. The two go hand in hand. A safe working environment can be maintained when practice is supported by a supportive safety culture (Dingsdag, Biggs, & Sheahan, 2006; Biggs, et.al, 2006).

Training courses within the Certificate in Construction Site Safety (CCSS) include renewable courses on construction site safe practice for trades people on the construction site. From this course, a passport is issued, providing trades people access to building sites from 74 Heads of Agreement construction companies throughout New Zealand, up from four in 1999 (Site Safe New Zealand , 2004). Similar training courses are also included in the CCSS programme for construction site managers. Again, a passport is issued, providing authorised access to the construction site, with the skills required to manage health and safety aspects of the Health and Safety in Employment Act. Both of these pathways are renewable, and include unit standards, which build upon the National Qualifications of trades peoples own trade qualification pathways. This therefore, links safety and qualifications together, as identified in the NZCIC strategy statements discussed earlier.

Leadership qualities of the CCSS programme are developed in the concluding courses, aimed at both trades people and construction site managers. Leadership Safety and Workplace Safety engage the learner into the management of workplace safety together with peers and other personnel on the work site. Planning and communication feature in these courses, to develop a workplace-wide focus on a safety culture that is pertinent to each construction site. These courses engage the trades people in safe practice communication, builds a sound relationship with management of the construction site, and supports a safety culture where both management and trades people are confident that a safe working practice is the primary focus of the project (Biggs, et.al, 2006).

An example of safe working practice culture was described in practice on a major roading construction site in Auckland, by Fletcher Construction, a Site Safe New Zealand Heads of Agreement partner. Fletcher Construction engages major construction project participants in the safe working practice of the building site, including: the owner of the project, the client; the construction company; and the construction workers. Between these parties, safe practices are discussed, designed and commissioned. Furthermore, practice has demonstrated that this style of construction management has actually lowered construction costs and maintained the construction process within the targeted timeframe (Burden, 2006).

Despite the issues identified by Wallis and Dryson (2002) surrounding inadequate training for workplace safety, funding the Site Safety programmes has been problematic. In 2000, as Unitec New Zealand and Site Safe New Zealand began working collaboratively, short courses were established from the Government funded Adult and Community Education (ACE) category. As the demand for courses grew, the Government became concerned at the mounting cost and began political moves to withdraw funding for this type of course. In essence, the Government considered that this form of education should be funded by the industry.

As the ACE funding was withdrawn by the Government, Site Safe New Zealand and Unitec New Zealand developed the CCSS programme, to maintain Government support in health and safety training in a hazardous industry. In March 2005, Unitec New Zealand was accredited to deliver the programme by the New Zealand Qualifications Authority (NZQA), and Government funding for the programme was approved by the Tertiary Education Commission (TEC), both of which are Government bodies.

However, midway through 2006, the TEC were expressing concerns on the programme, again indicating that these courses should be funded by the relevant industries. Conditions are being placed on the programme to withdraw Government funding late in 2007, particularly for renewable courses in the CCSS programme. At the time of writing this paper, the final model for future funding of the CCSS programme has not been finalised. However, it is clearly stated that funding for education and training for acceptable site safe practice as required by the Health and Safety in Employment Act (1992) does not seem to be a priority that the current Government wish to continue to fund from the Education portfolio.

The question is now raised that if the core development of the package is left to relevant industries, how will Government be capable of assessing educational quality of material and delivery?

Site Safe Operation Comparison against an Australian Model

An interesting comparison of methodologies can be made with the WorkCover model in New South Wales, Australia. Construction is New South Wales' sixth largest sector, with 181,474 people employed in the industry in 2003/04, representing 7 percent of the total NSW workforce (NSW Workplace Health and Safety Strategy, 2005). With a population of 6,774,200 in 2005 (Australian Bureau of Statistics, 2005) the construction industry in NSW services a similar population base to New Zealand, which passed the 4 million population mark in 2006 (Statistics New Zealand, 2006).

WorkCover NSW is a statutory authority within the Minister for Commerce's portfolio. Its primary objective is to work in partnership with the NSW community to achieve safer workplaces, effective return to work and security for injured workers (WorkCover NSW, 2007). WorkCover also has a regulatory role in licensing and certification of certain activities and hazardous equipment. It enforces the occupational health and safety legislation through education,

inspections, investigations into accidents and complaints, and when necessary, applies penalties and prosecutions (WorkCover).

The Australian Occupational Health and Safety Regulation 2001 imposes obligations on all employers to implement risk management processes in all workplaces. In occupational health and safety (OHS) terms, risk management is the process of recognising situations that have potential to cause harm to people or property, and doing something to prevent a harmful situation occurring or a person being harmed. OHS training is considered an important component of an effective risk management system (Workplace).

To assist in increasing the skills and knowledge of managers and workers alike, WorkCover provides training to NSW industry through a network of WorkCover accredited trainers and approved providers. These trainers are industry-based providers who comply with WorkCover accreditation criteria and conditions, and provide OHS training using OHS accredited training courses, developed by WorkCover (WorkCover).

This workplace training is supported by Government funding in the areas of workplace safety research, in line with the NSW Workplace Health and Safety Strategy 2005-2008, which is committed to two targets; “to reduce workplace fatalities by at least 20 per cent by 30 June 2012 (with a reduction of 10 per cent by 30 June 2007) and; to reduce the incidence of workplace injuries by at least 40 per cent by 30 June 2012 (with a reduction of 20 per cent by 30 June 2007)” (NSW Government, 2006). Both these targets are reflected in the National Occupational Health and Safety Strategy 2002-2012. All Australian State and Territory Governments, the Commonwealth Government, the Australian Council of Trade Unions and Australian Chamber of Commerce and Industry have endorsed the national strategy.

As an expression of this commitment, the NSW Government has allocated \$1 million for applied research during 2005/2006 under the WorkCover Assist programme, with an additional \$1.5 million over five years to establish the WorkCover Research Centre (WCRE) at the University of Newcastle’s Ourimbah Campus. The Centre was established in September 2004 and will work in conjunction with WorkCover to provide research and research training for the prevention of workplace injury and disease. The Centre is also mandated to “ensure the availability of high quality education and training in injury prevention, management and rehabilitation.” (WorkCover).

One of the priority issues facing the construction industry, identified by the NSW Workplace Health and Safety Strategy, is the issue of training. An objective has been set to “Enhance the training for new and existing workers and their supervisors...” (NSW Government, 2005) with a corresponding goal of “sixty per cent of supervisors in the Construction Industry are trained by 2008; 80 per cent by 2010; and 95 per cent by 2012” (NSW Government, 2005). One of the significant steps agreed to achieve this goal is that mandatory Vocational Education Training Advisory Board (VETAB) competency-based courses for supervisors be developed and implemented.

WorkCover NSW is multi dimensional in its portfolio delivery compared to the NZ Site Safe model. Site Safe does not deal with Licensing or Rehabilitation and the appraisal of operations scrutinised for comparison in this paper is isolated to the Safety in the workplace component of WorkCover NSW with a concentration on Construction safety. WorkCover’s part in the return to work and rehabilitation of injured workers is a role undertaken in New Zealand by the Accident and Compensation Commission (ACC)?

The NSW WorkCover model also differs from the New Zealand approach with the educational design and input of training packages being designed and monitored by WorkCover as a NSW Governmental body, while in the NZ context this has evolved through Unitec and NZQA as discussed earlier. In New Zealand the formation of Site Safe as the delivery platform of safety training has been driven with industry consultation. Another major difference in operation between Site Safe and WorkCover NSW is that the delivery of material to industry in New Zealand is organised by Site Safe as a single business entity while the delivery in NSW is by Government accredited private individual organisations that are not controlled under a single umbrella such as Site Safe.

The partnership with Unitec New Zealand was requested by the New Zealand Government to address the need for site safety training to be organised in an educationally consistent and sound manner and involvement with industry was essential. The future involvement and monitoring of the educational packages is currently being assessed by Government and Site Safe and the NSW model is an interesting comparison, especially with the government focus on agreed targets and educational material development.

Conclusions

The future of site safety training in New Zealand is unclear at present. The upcoming changes in Government funding and educational delivery of the CCSS programme will result in change, but exactly what shape that will take, is unknown.

One of the approaches open to the New Zealand Government is one of greater involvement in industry safety training. Recognition of the major contribution that occupational health and safety research can make towards raising work safety awareness and research training aimed at preventing or minimising workplace injury would be steps along this path. A more inclusive approach would provide the Government with the means to accurately and capably assess the educational quality of material and providers, and encourage and assist strategic research in workplace safety.

Regular summits of the major stakeholders; NZ Government, ACC, industry groups, employee representatives, education providers, TEC and NZQA; could be initiated to concentrate government and industry on the development of a clear vision of workplace safety activities for New Zealand, together with commitment to a set of realistic and significant fatality and injury reduction targets, and the development of a plan to achieve these.

The creation of industry advisory groups with a focus on workplace training, education research centres providing loops of information feeding back into accredited training and legislation aligned with national safety targets would support this.

The proactive stance of the NSW Government in the establishment and funding of an applied (workplace safety) research centre with Newcastle University makes significant inroads in the preventative measures designed to further implement scientifically evaluated operations and processes to provide reduced risk, enhance safety and ultimately reduce societal trauma and costs associated with hospitalisation and rehabilitation, it is hoped that a similar measures may be considered in the New Zealand context and the educational component of programme delivery of safety continues as a matter of government priority.

References

- Australian Bureau of Statistics, Australian Demographic Statistics. (June 2005) Cat.3101.0.
- Biggs, H., Sheahan, V., Dingsdag, D., & Cipolla, D. (2006). Safety Culture, safety attitudes and market force influences on construction site safety. In K. Brown, K. Hampson & P. Brandon (Eds.), *Clients driving construction innovation: Moving ideas into practice* (pp. 201-213). Brisbane: Cooperative Research Centre for Construction Innovation.
- Burden, J. (2006). Our own backyard: Project freeflow, *BuildSafe Conference 2006*. Auckland: Thomson Brookers.
- Department of Statistics. (1992). *The New Zealand Official Yearbook: 1992* (95th ed.). Auckland: Department of Statistics.
- Dingsdag, D., Biggs, H., & Sheahan, V. (2006). Changing safety behaviour in the construction industry, using enforcement and education as the stick and the carrot to improve safety culture. In K. Brown, K. Hampson & P. Brandon (Eds.), *Clients driving construction innovation: Moving ideas into practice* (pp. 214-219). Brisbane: Cooperative Research Centre for Construction Innovation.
- Health and Safety in Employment Act, New Zealand Government, (1992).
- NSW Workplace Health and Safety Strategy 2005-2008, NSW Government, 2005.
- NZCIC. (2005). Health and safety strategy: Construction industry in New Zealand (2005 - 2010). Retrieved November 2006 from: <http://www.nzcic.co.nz>.
- Site Safe New Zealand. (2004). Site Safe: Home page. Retrieved November 2006 from: <http://www.sitesafe.org.nz>.
- Statistics New Zealand. (1996). *The New Zealand Official Yearbook: 1996* (99th ed.). Auckland: David Bateman.
- Statistics New Zealand. (2000). *The New Zealand Official Year Book: 2000* (102nd ed.). Auckland: David Bateman.
- Statistics New Zealand. (2003). Injury Statistics 2001/2002: Work-related injuries. Number of claims for fatal injuries by industry and employment status. Retrieved November 2006 from: <http://www.stats.govt.nz>.
- Statistics New Zealand. (2004a). Injury statistics 2003: Clams for work-related injuries. Claims for fatal injuries by industry. Retrieved November 2006 from: <http://www.statsnz.govt.nz>.
- Statistics New Zealand. (2004b). *The New Zealand Official Yearbook: 2004* (104th ed.). Auckland: David Bateman.
- Statistics New Zealand. (2005). Injury statistics 2004: Claims for work-related injuries. Claims for fatal injuries by industry. Retrieved November 2006 from: <http://www.statsnz.govt.nz>.
- Statistics New Zealand. (2006). Injury statistics: Claims for work-related injuries (2005). Claims for fatal injuries by industry. Retrieved November 2006 from: <http://www.statsnz.govt.nz>.
- Statistics New Zealand (2006). Census 2006 National Population Count. Retrieved January 2007 from <http://www.statsnz.govt.nz>.
- Wallis, C. B., & Dryson, E. W. (2002). Failure after 5 years of self-regulation: A health and safety audit of New Zealand engineering companies carrying out welding. *Occup. Med.*, 52(6), 305-309.
- WorkCover NSW (2007). About Us. Retrieved January 2007 from: <http://www.workcover.nsw.gov.au>.