On the Philosophy and Content of Business Education Courses in Occupational Health and Safety

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Abstract

Speculation is made about the forces driving education and training in occupational health and safety and the kinds of courses that have emerged and are emerging in response to these. Cycles, fads and fashions in philosophy, the development of civil society and public policy strategy are briefly examined and OH&S course evolution is discussed against this background. The University of Southern Queensland (USQ) approach to OH&S education is explained.

1.0 Introduction

Occupational health and safety education for all seasons: that is the quest, Quixotic or otherwise, pursued here. Section 2 goes directly to a discussion of the forces thought to predominate in driving the occupational health and safety (OH&S) agenda and consequently the lagged rate and direction of change in OH&S education and training. (The question of education leading change is not pursued). Section 3 employs Section 2 as a backdrop for a discussion about cycles and fashions in philosophy, the development of civil society, public policy strategy and the implications of these for OH&S education and training. Section 4 describes the USQ approach to OH&S education. A conclusion follows.

2.0 Forces driving the OH&S agenda
A diverse range of forces is thought to impact on, and drive, the rate and direction of change in OH&S education and training. Discussion of these forces now follows.

(a) myth and ideology

Myth is that state of body and mind that energises and sustains human thought and action. Unfortunately myth is not always beneficent. When employed by reason and logic to attain specific tangible goals and objectives myth becomes ideology. Whereas ideology may prove ineffective, may be defeated or may fall, myth proves more obstinate and can not easily be changed. The sense of justice, equality before the law, fair play and the egalitarianism of human rights are elements of the wellspring of myth from whence the OH&S phenomenon emerges. John Donne (1624, p. 441) gives the definitive OH&S myth statement in his celebrated “no man is an island” metaphor.

No man is an Iland entire of it selfe; every man is a peece of the Continent a part of the maine; if a clod be washed away by the Sea Europe is the less, as well as if a Promontorie were, as well as if a Mannor of thy friends or thine owne were; any man’s death diminishes me, because I am involved in Mankinde; and therefore never send to tell for whom the bell tolls; it tolls for thee.

In 2000 myth of the John Donne kind is having a difficult time. It is acknowledged and then put in the too hard basket. Conditions will most probably have to deteriorate a lot more before myth of this kind can be triggered and kick in to become the overwhelming force it is capable of being. Managers, no matter how pushed they are to maintain the bottom line, should nevertheless be aware of human rights and human suffering. Such awareness is difficult to acquire on the job where more immediate problems present themselves. Such awareness must come into the heart, mind and soul right from the beginning. It must permeate the whole society and is a very precious commodity. Formal education as it is now conducted in a number of countries, even if it can do very little, should still do its bit. Any OH&S course worth its salt will provide an opportunity to explore the myth aspects of civil society.

(b) the human condition itself and the law it calls up and the litigation phenomena

There are two clear-cut explanations for the emergence of the so-called “civil society.”

Under the Aristotelian explanation, humankind is basically good and is a political animal, an animal of the polis or congregation of those of its kind. The polis emerges because humanity is not sufficient in itself, and in order to be complete, humans require the company and service of others. This need is intrinsically good and the city emerges out of goodness. With a little help from education, law and punishment, humans can live well disposed to one another and get on with the pursuit of happiness with justice.

Under Hobbes the default position of humanity is the war of everyone against everyone else and the vainglorious pursuit of wealth and power as a means of domination. One fear
is greater than this desire for power. It is the fear of violent death and it is out of this fear that an otherwise brutal and uncaring species submits to the rule of law. The *polis* emerges under the rule of law which itself is predicated on an evil intrinsic to the human species. It is only under the rule of law that civil society will prosper.

Both of these explanations of the human condition call up the rule of law and under this rule both good and evil forces prosper. The law itself, and the manner in which it is used, emerge from these forces. Law as preventive public policy or as compensation might be viewed as being at the Aristotelian end whilst law as obfuscation, profiteering, or bullying in the sense of its being used by one party against another, for strategic purposes, might be seen as Hobbesian. But perhaps this is too simple. Whatever the reason, the rule of law in OH&S has a long tradition, is a business in itself, calls up and sustains other businesses, and is unlikely to diminish in importance.

The OH&S professional should be knowledgeable about OH&S law and the earlier comment about OH&S course integrity applies, ipso facto, in the case of law.

(c) history, including human rights and the politics of human rights and the emergence of duty of care

The Judeo-Christian or Western tradition has, for some three millennia, sustained a written conversation and inquiry into human rights, justice, the rule of reason and the treachery, chicanery and mendacity of politics. This is not to say that such dialogues are absent from other traditions. Although OH&S history and law is ancient and can be found in the Old Testament and other ancient codes, it comes to us in a form very much influenced by (a) the industrial revolution and its excesses and the ensuing battle for a safe workplace and (b) the renewed interest in, and fight for, human rights and conditions epitomised by the establishment of the United Nations after World War II.

These forces have seen the establishment of the *duty of care ethic* at common law, its usurpation by statute law makers, and its employment as a political lever in trade and aid machinations. These forces and actions, together with education and economics, have ensured that OH&S is now part of the everyday business of life. Because of this, OH&S education and training must move with the times and continually update to meet the changing needs of business and society. History can bring enlightenment to this endeavour and provide lessons for successive generations to learn.

Brooks (1988, pages 13 – 65) instructs us about the patience and perseverance that, over the past 16 decades, have fuelled the evolution of the *duty of care ethic*. Today this ethic is expressed as one overriding duty - a duty requiring the employer, so far as is practicable, to take reasonable care to carry out their operations so as not to subject those employed by them to unnecessary risk. This duty is stringent. As Brooks points out, it is more in the nature of a duty to ensure that reasonable care is taken rather than a duty to take reasonable care.
A 1995 International Commission on Occupational Health Conference in Brisbane Australia invited contributions from the fields of history, philosophy, ethics, values and politics and as a result was able to publish some very interesting papers. Likewise the ANZAOHSE 98 in Brisbane experimented with the theme of ethical empowerment of the OH&S agenda and in one of the keynote addresses Longstaff (1997) confronted executive management with a challenging proposition.

I put it to you that the directors are responsible to the shareholders for profit in perpetuity, and that this general expression of a principle permits, indeed requires, directors to pay full regard to their employees, to labour relations generally, to the community, to the country, in all decisions for and on behalf of shareholders. (Dunlop 1965, p.7, quoted in Longstaff, p. 13)

Recently there have been quite substantial developments supporting the inclusion of history and the humanities in OH&S education and training. In 1996 the University of Milan held the founding seminar of the International Network for the History of Occupational and Environmental Prevention. In 1997, a newly founded scientific committee of the ICOH, in cooperation with other interested parties, held the First International Conference on the History of Occupational and Environmental Protection at the Pontificia Universitas Urbaniana, Rome.

In formalising the recognition of a history and humanities presence in OH&S education and training these developments have announced the correction of an academic truancy in the field and provided an alternative perspective to the dominance of the purely economic rationalist view so often presented. A complete course in occupational health and safety will provide space for a contribution from history and the humanities.

(d) cycles in the evolution of society, government and public policy

We now live in a period branded as the post modernist era and in a decade which has seen the so called triumph of capitalism over collectivism. Prior to post modernism there was a period known as modernism. This era (i.e. modernism) began in the second half of the 17th century with the emergence of the method of Newtonian physics which, through the prediction it allowed, facilitated such breathtaking events as the discovery of new planets, an understanding of the spectra of visible light and the principle of colour and, through optics, the manufacture of Newtonian and Galilean telescopes. The scientific and industrial revolutions occurred during the modernist period with the so-called factual scientific knowledge gaining in importance. By the turn of the century God was dead (or so the explanation goes) and to replace the Godhead, logical positivism (among other phenomena) was soon to emerge in pursuit of the factual and scientific rules that should be employed in organising society. That is to say, an attempt was made to apply the method of science in a realm of human existence that is essentially a values phenomenon. Nazism, Communism, Capitalism were some of the systems that emerged and/or grew to fill the philosophical void and it is the rejection of some of these, and of logical positivism, that are fundamental to the emergence of the present era of post modernism.
The emergence of relativity to replace the Newtonian cosmology was also a big factor in facilitating this transition.

Under post modernism:

there is a new or heightened degree of fragmentation, pluralism, and individualism; a strong influence on political, economic, and cultural life by global developments and a concomitant weakening of nation state institutions and practices; a linking of the local and the global (with an upsurge of regionalism (think globally, act locally); and a reversal or qualification of some of the typical spatial movements and arrangements of modernity. (Kumar 1995, p.147 reported in Temple Smith)

The post modernist condition is said to be most corrosive of care and the de facto sustainability of due diligence and duty of care.

Post modernism is a world of eternal presentness, without origin or destination, past or future; a world in which it is impossible to find a centre, or any point or perspective from which it is possible to view it steadily and to view it whole; a world in which all that presents itself is temporary, shifting and local forms of knowledge and experience. Here are no deep structures, no secret or final courses; all is (or is not) what it appears on the surface. (Kumar, 1995, p 147 reported in Temple Smith 1995).

In his paper Temple Smith (1995) goes on to address the corrosive impact of post modernism on duty of care which is of course at the foundation of current OH&S thinking. He writes:

Post modernism is a mood or doctrine or school of thought that challenges the very basis of western knowledge and values; it challenges, therefore, much of what is done in practice in general and in education in particular. If we regard care for others as a duty, something based on notions of what is right, or perhaps virtuous, it follows that postmodernism challenges both our theory and our practices in these areas of human behaviour. Perhaps the need to resort to more and more legislation and regulation is a reflection on how far the community has moved from reliance on ordinary human action in this regard. If post modernism is already influencing how we regard care and its provision, what replacement can we expect for the duty of care? The thought dawns that if post modernism is successful in its task of giving us only the present, that care and the duty of care are doomed in the sense of voluntary human action. There would be no need, or perhaps no will, to educate people in care and its provision in any universal sense. (No pagination)

It is very interesting to note that in 1977 Tony Blair was speaking of introducing new and more liberally dispensed tough jail sentences for CEO’s in England who breach the duty of care provisions. In England, the Robens Committee was appointed in 1972 and
adopted the *duty of care* doctrine as a basis on which to build statute legislation in OH&S. The new tough Blair intention is thus emerging after only two and a half decades of the Robins creation of (and the post modernist administration of) the *duty of care* doctrine in statute law.

Blair’s stated intentions have a sobering effect and add to the pertinence of Temple-Smith’s question. Has post modernism begun to erode the *duty of care* ethic to such an extent as to make it ineffective in preventing trauma? As mentioned earlier, great use is made of it for compensating trauma.

There is another force inherent in post modernism which is very strong at the moment. Under the so called triumph of capitalism over collectivism, those dictums of the *Communist Manifesto* which were quickly adopted by the capitalist states (e.g. free education, free health care and the like) and which were painstakingly developed in the first half of the 20th century to steal the march on Communism, are now being dismantled. Along with this dismantling go other symbols of collectivism. For example in Australia the Torrens system of conveyancing, the idea of the common wealth and a common wealth bank, the idea of the commons itself, national anything, be it airlines, roads, railways, telecommunications systems, auditors general or otherwise are threatened. The overriding current criteria and basis for decision making of this kind is generally known as economic rationalism: cash benefits over cash costs and a pox on all the rest!

Within all of this, OH&S has found a survival niche in non-price business strategy and further comment about this claim will be found below. But in accordance with the anything goes of post modernism, the flavour of the legislative philosophy of OH&S is one (at first bite anyway) of laissez faire. In our times it is called by such names as minimum standards, self assessment, self help and the like with governments per se being primarily responsible for as little as they can be: NIMTOO as the process is generally called - Not In My Term Of Office. However there were signs in a recent election in Australia that politicians should be careful how they play this one.

But at the same time, there is more and more regulation, and the bite of the law remains. And amongst all of this is the phenomena of sustainable development and the shifting paradigm of OH&S to O&EH&S increasingly known as *safety health and environment - SHE*. Some firms are even leading by example and have moved to beyond compliance through higher levels of OH&S performance.

Whereas the *duty of care* under a laissez-faire approach to OH&S may well be approaching its use-by date as an effective *preventive* panacea for industrial morbidity and mortality, the fear of the litigation permitted at common law, and the renewed interest in punishment, may well ensure its effectiveness for some time to come. If this is indeed the rate and direction of change (i.e. if litigation, policing and punishment are to replace free will as the engine of duty of care) then some might feel disquieted about the nature of civil society in the West.
There is no question that OH&S has a rightful place as a tool in the array of non-price tools available for business profitability. The essential point being made here is that society evolves and this evolution may incrementally alter the effectiveness of public policy strategy for the use of OH&S qua health and productivity tool. OH&S is, inter alia, a sociological and psychology-of-work phenomenon, and OH&S courses should acknowledge this by providing an opportunity for students to appraise themselves about these matters. It goes without saying, of course, that humanitarian values should guide the economic rationalist use of OH&S as a health and productivity tool. It does not go without notice though, that humanitarian considerations are often overlooked when push comes to shove in the economic survival of the business firm.

(e) the profit and sustainability motive in business, medicine and rehabilitation

Although the essence of the sustainable development approach to business in the modern industrial state was suggested long before Brundtland (1989) - see for example Schumacher (1973) or Pinchot (1915) - and although Rio +5 was, on balance, pessimistic about the progress of Agenda 21, there is quite some evidence that firms are beginning to apply sustainable development thinking in their strategic planning and life cycle manufacturing.

This is not to say that some of these firms are not without plurality, that is, that they act differently depending on the country and/or market in which they operate. But it is to say that there has been a quite substantial adoption of duty of care, due diligence, quality control, responsible care, safety systems, green and clean product and process development and marketing, purchasing strategy, green contracting and ISO standardisation and the like as non price strategies in profit maximisation and business survival and sustainability. Some firms are preempting the law in adopting beyond compliance performance and for this they need access to E&OH&S tools and techniques for sustainable development.

Examples of names given to this new business enlightenment mentioned in the preceding paragraph are enterprise strategy (Stead 1993) and sustainable performance (Kinlaw, 1993) and the new occupational and environmental health managers have colonised standard tools and techniques of competitive business strategy. Two examples of well known business planning and strategising techniques that have been colonised in the name of good environmental management are the value chain technique and portfolio analysis.

The OH&S professionals should be aware of such tools and techniques and good OH&S courses will address this need.

(f) the business of O&EH&S itself including the standards business

Ever since the mercury poisoning at Minnemata in Japan, there has been awareness that the world is the workshop. The University of Occupational and Environmental Health (UOEH) was set up in response to this awareness and right from that time Japanese
business has been clever about, and cashing in on, the profit potential of clean product and process. This awareness has enabled business to win big profits as a result of the demand created by the clean technology and product clauses in international standards and contract documents. Occupational and environmental health firms drive the O&EH&S agenda with great enthusiasm. The Globe series of conferences is an example of the strength of the environmental business lobby.

Combined with this, the standards business, both nationally and internationally, is substantial and often these standards are called up in legislation and thus in effect become law. There are of course countervailing strategies and firms often lobby for and successfully achieve, dispensations and considerations which allow the full benefits of the standards to be postponed, watered down or avoided in exchange for cash payments disguised as licence fees, or alternatives to standards disguised as loopholes in Codes of Practice.

OH&S professionals should, through the content of good OH&S courses, be able to appraise themselves of the nature of the O&EH&S business and of the costs and benefits of standardisation in OH&S strategy

\[(g)\] the looming environmental crisis, the changing boundary of market failure, the coalescence of due diligence and duty of care, and the emergence of the beyond compliance corporation.

The Robins duty of care approach in occupational safety and health, and its due diligence cousin environmental safety and health are blades of a fairly substantial pair of scissors. They are cutting and shaping a new business management paradigm. The distinct boundaries between occupational health and safety and environmental health and safety are beginning to blur and, as was mentioned, the tools and techniques of O&EH&S are being adopted as non-price competitive and profitability strategy. There is a merging of boundaries and a sharing of tools and techniques between OH&S and EH&S and this is leading to that subset of best environmental management known as safety, health and environment - SHE.

The SHE paradigm is largely being pulled forward by industry itself. For the greater part, universities and public services, being constrained as they are by tradition, conservativeness and the incessant boundaries/territorial wars, follow reluctantly as opportunity presents itself. Furthermore, of the energy powering these scissors, duty of care is presently (2000) the thumb side and due diligence, the fingers side. The due diligence fingers are being driven by the very real and ever growing environmental crisis impacting on the human habitat. Global warming, ozone depletion, acid rain and loss of biological diversity are combining with population demography, air, noise and water pollution, and forest, rangeland, wetland and ocean mismanagement to such an extent that the very basis of civilisation as we now perceive it, is believed to be threatened.

The implication of this for OH&S education and training is that the focus and direction of OH&S may be weakened somewhat by the bigger panic and response to the wider
environmental issues. But to solve the occupational health problem in the first place is, more often than not, to solve the environmental health problem and it should not be forgotten that the starting point of all sustainable business development is a healthy, educated, motivated, safe and psychologically stable workforce. This last statement applies \textit{ipso facto} to the management group. Firms are beginning to demand graduates skilled in O&EH&S. The inspectorate, if it is to remain viable and command respect, has little option but to keep up with this training trend: likewise those involved in OH&S education and training. Good OH&S courses will provide opportunities for students to find interdisciplinary applications for their skills and to equip themselves, through an understanding of theory articulation and paradigm shift, to participate fully in their profession as its boarders change.

\textit{(h) The march of science itself.}

Each day more and more is learned about the function of the human body and its relationship to a Gaia functioning planet. More and more is found out about the likelihood of cause and effect and this presents formidable E&OH&S challenges for society. The march of science is unlikely to diminish of its own accord. The basic stuff of OH&S education - anatomy and physiology, ergonomics, toxicology and hygiene and the like – should always be included and continually updated to address new findings.

To sum up: The modern OH&S professional requires a sound understanding of OH&S law and the codes and standards called up by that law. Such law encompasses prevention, compensation and rehabilitation. In addition they should possess a kit of tools and techniques that can be applied in preventing trauma, mortality and morbidity. The OH&S professional should also be aware of management science and the changing OH&S/EH&S paradigm in the era of sustainable development. Finally the OH&S professional should have some understanding of the psychology of work, sociology, the history of OH&S prevention, and the philosophical heritage of the west. They should know that their profession is ethically grounded in the very best parts of that tradition.

\subsection*{3.0 Evolution in public policy strategy and the response of education and training to this.}

The stages of civil society known as modernism and post modernism including the rejection of logical positivism have been mentioned above at (d) and, in recent history, there have been various coping reactions and variations on a Robins theme in respect of public policy in OH&S legislation and in OH&S education and training. Winder (1997) identifies “five main periods of OH&S in Australia”. He writes:

\begin{quote}
Safety has been an important part of many industries (for example mining, manufacturing, and construction) for decades. A long history of accidents, injuries, disease and death in such industries produced industry specific legislation, such as the Mines Act, the Factories Shops and Industries Act and the Construction Safety Act. These contain provisions that oblige employers
\end{quote}
to improve safety. Occupational health, once the province of medical specialists, has spread to other disciplines. These two activities overlapped and eventually combined to become Occupational Health and Safety (OHS).

There have been five main periods of occupational health and safety in Australia:

(a) the prescriptive legislative approach, which predates occupational health and safety legislation (ending in the early eighties) and which implicitly assumed that work was hazardous and that some injuries and fatalities were always to be expected,

(b) the consultative approach, where empowerment of workers to assist in the development of systems (such as occupational health and safety committees) to deal with workplace health and safety was the preferred model of occupational health and safety (throughout the eighties and beyond),

(c) the standards-based approach, which grew out of the consultative approach, when it became recognised that empowerment and consultation wasn't enough, and additional rules and guidance were needed (which developed throughout the late eighties and beyond),

(d) the training-based approach, which also grew out of the consultative approach, when it became recognised that empowerment and consultation wasn't enough, and additional knowledge and education were needed (this grew in the late eighties and the early nineties, but is currently in decline due to the suspension of the Training Guarantee legislation by the Howard Government),

and,

(e) the risk management approach, with its attention on managing occupational health and safety (early nineties onwards).

The OH&S agenda has called up education and training and three broad categories exist:

(a) pure and applied science based courses, (b) managerial, sociological, philosophical, political, and psychological type courses, and (c) know how, can do psycho motor practical performance courses. Of these, the USQ approach fits best into category (b) but there is a substantial applied science content and some pure science content. The next section will describe the USQ approach in detail.

4.0 The University of Southern Queensland approach to OH&S education.
At the University of Southern Queensland there are two specialisations. The Occupational Health and Safety Specialisation consists of four subjects that stand alone in dealing with OH&S in the era of sustainable development. There are another four subjects which stand alone as the Environmental Health and Safety specialisation. They are courses in Environmental Management and when these eight subjects are joined they constitute a Graduate Diploma in Management.

4.1 The OH&S specialisation

The subjects in the OH&S specialisation are:

55601 Human Factors
55602 Corporate Occupational Health and Safety
55603 Occupational Health and Occupational Hygiene
55604 Safety Science in Practice

The aim of the OH&S specialisation is to allow students to be able to:

(a) manage the introduction at the workplace of health and productivity specific loss prevention procedures and processes that are based upon a competent understanding of human body systems and motivation and personality aspects of the human factor,

(b) ensure, through the application of general principles of management, that workplaces under their control are managed in accordance with the duty of care prescriptions of modern legislation,

(c) be proactive in preventing health and productivity loss through competence in interpreting and applying standards predicated upon a good understanding of the pathology of work related disease and the fundamentals of good occupational health and hygiene,

(d) communicate with government experts, private consultants, researchers and academic writers and commentators and, from the basis of those communications, construct audit procedures and proforma that can be used in a practical way to monitor the health and productivity status,

and,

(e) understand the relationship between job safety analysis, safe job practice, and total quality control and the contribution of these to health and productivity savings in the workplace.
4.2 The EH&S (Environmental Management) specialisation

The subjects in the environmental management specialisation are:

55040 Corporate Environmental Management
55041 Global Issues in Sustainable Development
55042 Tools and Techniques for Sustainable Development
55043 Environmental Politics and Policy

The four subjects which together make up the Environmental Management specialisation present a body of knowledge designed to equip managers for public and private decision making about complex sustainable development - environmental health and safety issues faced daily in the corporate and public sectors. The environmental management specialisation aims to allow those who complete it to:

(a) be able to understand the nature of the historical, philosophical, ethical and socio political forces driving the environmental management sustainable development ethic,

(b) be capable of transforming their understanding of the environment industry into competitive edge business strategies that synergise sustainable development and business stewardship of natural resources,

(c) be capable of conducting their day to day business planning and strategy decision making with some awareness and thoughts about ethics and values and the modern corporation qua good corporate citizen,

(d) be aware of the uses to which the green ethic and rural myth are put by politicians and of the implications of this, both costly and beneficial, for business survival,

(e) be cognisant of and proficient in management tools and techniques in environmental management,

(f) be aware of the global issues driving sustainable development and the international conventions pertaining to those issues and the scientific arguments upon which those conventions are based,

(g) be knowledgeable about the national and international environment industry, and about strategies that have been successfully used to penetrate markets and/or develop new environmentally friendly processes, products and services;

and,

(h) be capable of developing and sustaining an appreciation about the discipline of green management, the human condition and the potential of humans to bring forward creative and peaceful solutions to the overcrowding of the planet.

Table 1 specifies the content of the subjects in the OH&S specialisation. Table 2 does the same thing for the Environmental Health and Safety (Environmental Management) specialisation.
Table 1: Content of the OH&S specialisation subjects

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Synopsis</th>
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<tr>
<td>55601</td>
<td>Human Factors</td>
<td>This unit provides basic information and knowledge about the human factor and promotes general loss prevention and perspectives based on such knowledge. Topics covered include: anatomy and body systems, human anthropometry, ergonomics, the human machine interface, and workplace layout and design, accident statistics and the rate trend and kinds of accidents that impact on the human body and the psychology of work.</td>
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<tr>
<td>55602</td>
<td>Corporate Occupational Health and Safety</td>
<td>This subject first provides an introduction to fundamental principles and maxims of method in occupational health and safety management. It then discusses the state of the art from local, national and international perspectives. Using this knowledge as a backdrop, the subject goes on to investigate a number of topics: law and the legal environment, principles and practice of industrial relations, policy, strategy and know how in managing occupational health and safety, accidents and accident prevention, investigation and reporting, health and safety promotion, inservice training.</td>
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<tr>
<td>55603</td>
<td>Occupational Health and Occupational Hygiene</td>
<td>This subject aims to introduce managers to the pathology of work-related disease and basic procedures and processes in occupational hygiene. Topics covered include noise and vibration, radiation, thermal comfort, lighting, dusts, modes of entry, standards and threshold limit values, measurement techniques, toxicology, occupational diseases, biological hazards, workplace stressors (chemical and physical) and principles for their control.</td>
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<tr>
<td>5604</td>
<td>Safety Science in Practice</td>
<td>This subject covers the practical applications of physical, biological, behavioural, and engineering sciences to safety and health control practices in the workplace. The approach is to analyse hazards and tasks and to identify and understand the nature of risks so that sequences of events that can be interpreted and components kept separate, isolated and constrained. Students will be given an opportunity to apply their knowledge in a wide choice of fields, eg personal protective equipment, electrical safety, safeguards and warning signs, amenities, pressure equipment, welding safety, hazardous substances, air water handling, lead and asbestos, construction and maintenance equipment, cranes and hoists, lifting gear, excavation and trenching, demolition, construction, alteration and removal, materials technology.</td>
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Table 2: Content of the EH&S specialisation subjects

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<tr>
<th>Course Code</th>
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<tr>
<td>55040</td>
<td>CORPORATE ENVIRONMENTAL MANAGEMENT</td>
<td>This subject introduces managers to environmental stewardship and environmental management. Topics covered may include, inter alia, corporate environmental strategy, environmental policy and regulation, investing in environmental business, case studies in the application of pollution prevention to industrial facilities, convention updates, and global environmental markets.</td>
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<tr>
<td>55041</td>
<td>GLOBAL ISSUES IN SUSTAINABLE DEVELOPMENT</td>
<td>This subject investigates major phenomena perceived to be threatening planet earth's environment and consequently the progress of industrialisation and the standard of living in both rich and poor countries alike. Topics may include: global warming and CO2, acid rain and SO2, ozone depletion, loss of biological diversity. It also introduces other topics: air, noise and water pollution, land degradation, and ocean management.</td>
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<tr>
<td>55042</td>
<td>TOOLS AND TECHNIQUES FOR SUSTAINABLE DEVELOPMENT</td>
<td>This subject introduces managers to tools and technique (both general and specific) that may be used in best practice environmental management and sustainable development. Topics covered may include environmental impact assessment, environmental auditing, environmental reporting and investor and public relations, management performance tracking and measuring systems, product tools: life cycle analysis and product stewardship, full cost accounting, internal auditing and clean technology financing, process tools, pollution prevention and waste minimisation programs, standards and standardisation, voluntary self regulation and beyond compliance, disclosure policy, measuring performance, ISO 1400, entering international markets and capitalising on clean energy markets.</td>
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<tr>
<td>55043</td>
<td>Environmental Politics and Policy</td>
<td>Environmental management is about the management of both physical problems and a political debate. Environmentalism is based on a range of philosophical and economic ideas and those ideas are now part of the mainstream political debate. In this unit, students will learn about the background to environmental ideas, and about the various aspects of environmental politics. This leads to some discussion of why governments take certain decisions with regard to the environment, how business people respond to those decisions, and what policy options could be considered to resolve conflict over the environment.</td>
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Table 3: Graduate Certificates and the Graduate Diploma and Various Exit Routes.
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<tr>
<th>Subjects</th>
<th>Exit Linkages</th>
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| **Grad Cert Man** (Environmental Management) - the four subjects listed below in this cell.  
- 5040 Corporate Environmental Management  
- 55041 Global Issues in Sustainable Development  
- 55042 Tools and Techniques for Sustainable Development  
- 55043 Environmental Politics and Policy | ➔ Exit with Graduate Certificate in Management and thence to the MBA, M Bus, MMan or M Phil depending on needs and entry conditions. |
| **Grad Cert Man** (Occupational Health and Safety) - the four subjects listed below in this cell.  
- 55601 Human Factors  
- 55602 Corporate Occupational Health and Safety  
- 55603 Occupational Health and Occupational Hygiene  
- 55604 Safety Science in Practice | ➔ Exit with Graduate Certificate in Management and thence to the MBA, M Bus, MMan or M Phil depending on needs and entry conditions. |
| **Grad Dip Man** (OH&S & EH&S) - all of the 8 subjects listed in the cells above. | ➔ Exit with a Graduate Diploma in Management and proceed to further study depending on needs and entry conditions. |
| **MBA**  
One 4 unit OH&S or EH&S specialisation + 8 core units | ➔ Exit with an MBA proceed to the DBA. |
| **MMan**  
The 8 O&EH&S subjects + any 4 MBA units or 4 units of thesis, action research, dissertation or project work |
4.3 Two Groups of Four: Safety Health and Environment

The Environmental Health and Safety (Environmental Management) specialisation the Occupational Health and Safety Management specialisation, when linked together, provide a unified body of knowledge for managers involved in safety, health and environment matters in industry, the trade union movement, the armed and emergency services, the public services and consulting firms.

Table 3 outlines the manner in which the Graduate Diploma and the two Graduate Certificates are linked and the opportunities these awards provide for persons wishing to proceed to higher studies by coursework or research.

Of the higher degree studies mentioned in Table 3 the MBA is a coursework degree. The MBus is a coursework degree and the MPhil is a research degree. The MMan can be taken by coursework or by coursework and thesis.

5.0 Conclusion

This paper has provided background material for the claim that an appropriate form of OH&S education in the era of sustainable development is one which provides a technical SHE perspective governed by, and answerable to, a values system inherent in the Western tradition. Such an approach, taking in as it does the general parameters of the human condition, is nevertheless technical and applied. It is of practical value in the everyday business of life and the general and real business now faced by humanity, that of preserving the human habitat. It also contributes to the preservation of civil society which is under considerable threat.

References


Temple Smith, R (no date) *Care, Post modernism and Education: a Reconnaissance*, a working paper in progress at the University of Southern Queensland.

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