



Essay

Linking Cooperative Education and Education for Sustainability: A New Direction for Cooperative Education?

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In this article the authors propose that co-op practitioners and researchers need to constantly re-examine the practice and future of cooperative education. Co-op currently introduces large numbers of graduates into the business and manufacturing employment sectors. A number of authors have argued that co-op graduates rapidly advance in companies and assume middle and senior management roles. These co-op graduates and their non-co-op counterparts become the business and commercial leaders of the future. Here we argue that one beneficial future direction for co-op could be in the area of graduate understanding about education for sustainability (EfS). This paper begins with a description of the principles that underpin concepts for both EfS and cooperative education and examines three propositions as to how cooperative education might act as a vehicle for delivering aspects of EfS. (*Asia-Pacific Journal of Cooperative Education*, 2003, 4(1), 1-8).

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Cooperative Education as a means of training and education has a long history and now covers an enormous variety of programs of study such as nursing, teacher training, science, technology, engineering, and so forth (World Association for Cooperative Education [WACE], 2000). In addition, there are a wide variety of education providers including universities, colleges of technology and polytechnics (Eames, 2000). According to S. Taylor (2002) cooperative education as a strategy for combining classroom learning with on the job training is becoming well known and understood and it is the close interaction between the learner, the education institution and the employer – public or private sector partner – that characterizes cooperative education.

Co-op has been reported to be an educational strategy that is highly successful in terms of operational outcomes for all three partners, students, employers and educational institutions. For example, students are seen to benefit in terms of ease of getting jobs, getting better jobs, greater remuneration and/or advancement (Somers, 1995; Wagstaffe, 1995; Wessels & Pumphry, 1995, 1996). Employers benefit from ease of recruitment and strengthening links to educational institutions, whereas institutions also gain from such links and can, for example, gain in student recruitment (Coll, 1996; Hurd, & Hendy, 1997).

In most cooperative education programs, a proportion of students will be placed in manufacturing settings where there may be ethical issues relating to resource exploitation,

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pollution, globalization and so forth. All of these issues are linked to the concept of sustainable development, which, because of concerns about increasing environmental degradation, is becoming an increasingly urgent and topical issue for present day societies. Recently there have been calls for the recognition of the importance of sustainable development within the broader sectors of society, most notably the business sector and training (Bourn, 2000). As a consequence, the United Nations (2002) recent world summit on sustainable development called for the development of workplace partnerships and programs including training and educational programs on the concept of sustainable development. Specifically, there was a recommendation to “provide support for the development of sustainable development strategies and programs, including in decision-making on investment in infrastructure and business development” (United Nations, 2002, p. 15).

In this article we examine the term ‘sustainable development’ and explore some of the principles behind the educational concept that has evolved from traditional environmental education to help address it, namely, education for sustainability (EfS). We conclude by discussing whether and how aspects of EfS might be delivered via cooperative education.

Education for Sustainability

According to Cross (1988), the term ‘sustainable development’ has its origins in the sociopolitical rationalization of increasing alarm over the state of the environment. Sustainable development appears as a cultural discourse that is rapidly gaining validity in society. It implies that people who are high per capita consumers of energy and resources may continue to be so only within certain boundaries. It has as a goal the prospect of improving standards of living and the quality of life through nullifying the negative effects on ‘quality’ from environmental damage. Underlying this is an assumption that the potential for environmental disaster is solvable within the present global system (World Commission on Environment and Development [WCED], 1987). Thus it appears to provide a way in which the economic development of, for example, Western countries may continue to occur, provided ‘green’ issues are taken into account (Pearce, 1989). It is clearly very contentious to argue that individuals can continue to enjoy a high material standard of living that at present inevitably involves a high consumptive lifestyle, while at the same time reducing environmental damage. It could thus be argued that the term ‘sustainable development’ contains an internal contradiction if economic development is seen to encompass increasing standards of living.

Regardless of the above debates about EfS, education is seen as one of the main ways of achieving sustainable development or at least of reducing environmental degradation. Until the last decade this took the form of traditional environmental education, proponents of which held the view that simply giving individuals knowledge and appreciation of the environment would change their attitudes and behavior towards it (see, e.g., Fien, 2001; Huckle, 1991;

Tibury, 1995). However, for the past decade or so, a number of authors (e.g., Kothari & Parajuli 1993; O’Connor 1989) have called for the linking of ecological sustainability with issues of social justice. Kothari and Parajuli (1993) see the achievement of social justice as the prerequisite to ecological sustainability. They point out that conservationists primarily propose national parks and sanctuaries as sites of protection and survival, but argue that ecological struggles need to combine such conservation activities with social justice to defend what they term ‘social nature’. Kothari and Parajuli also claimed that peoples’ position as defenders derives not from the concept of ‘nature under threat’ as does that of conservationists, but rather from a relationship with the land, water and forest as the fundamental basis for ‘their own elemental struggle to survive’. Bullard (1993) likewise argues that environmental crises cannot be solved effectively without addressing issues of social justice.

According to the environmental organization Third World First (1990), middle class people are in possession of the ‘privilege of concern’ as they have the financial ability to look beyond their own livelihood and explore what is going on globally and make connections between lifestyle consumption patterns and environmental issues. However, lower socio-economic groups can not afford this ‘luxury’ and it is only when they are involved in a practical and direct way with their local environment that they too go on to make wider connections.

These views have clear implications for education, and Sterling (2001) states that the early assumption, shared by most people in environmental education – that if people learn about environmental issues, their behavior will change – is simplistic and deterministic. Not only does this simplistic view not work, but too much environmental knowledge (particularly relating to seemingly habitual global environmental crises) can be disempowering, without a deeper and broader learning process taking place. Huckle (1991) concurs, arguing that much traditional environmental education is in fact part of the problem, rather than ‘the solution’. Current practice fails to reveal the true causes of environmental problems and to educate students in ways that enable them to realize sustainable development. It is based on inadequate theory and yet often receives support from powerful elites who must manage the global ecological crisis. Paden (2000) supports this belief, arguing that the environment, equity and economics should be considered as a whole.

These concerns regarding the shortcomings traditional environmental education have seen the gradual evolution of a new concept, *Education for Sustainability* (EfS) and Baines writing in 1996, gave this new concept his support stating that it would be inappropriate if our understanding of environmental education did not evolve to include a social dimension. Without this change of perception, he believed the role of education in helping make the transition to sustainable development was going to be difficult to achieve.

Blewitt (1998) also believes that education for sustainable development has moved beyond the more narrowly focused environmentalism and environmental education-based notions, to encompass four major goals, which are detailed below:

1. To foster clear awareness of, and concern about economic, social, political and ecological interdependence
2. To provide students with opportunities to develop the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment and achieve sustainable forms of human development
3. To encourage the emergence of responsible patterns of behavior towards the local and global environment by individuals, communities and business
4. To nurture a sense of inter-generational solidarity recognizing sustainability principles as key to people's improved quality of life.

Thus EfS differs significantly from the apolitical, naturalist and scientific work that was carried out under the environmental education banner in the 1970s and early 1980s. This form of education, namely EfS, is instead concerned with the integration of the complementary disciplines of environmental and development education and requires reconciliation between environmental conservation and economic development. Furthermore, it not only considers immediate environmental improvement as an actual goal, but also addresses educating for sustainability in the long term (Tilbury, 1995).

According to Bourn (2002), education and awareness raising about sustainable development is now emerging as a major item of debate. However, the inclusion of a strong social dimension can make EfS a difficult educational concept to deliver compared with traditional environmental education.

Characteristics of Education for Sustainability

Education for sustainability is, by its very nature, difficult to define and as such it is more helpful to examine some of its key characteristics such as relevance, action-orientation, and the fact that it is socially-critical and value-laden.

Sterling (1996) believes that EfS is contextual. Hence, where possible, EfS should be applied and grounded in the local economic, social and ecological context and community, followed by regional, national, international and global contexts. Tilbury (1995) also argues that relevance must be a central principle underlying EfS. It must encourage students to explore links between their personal lives and wider environmental and development concerns. Fien (2001) agrees that important aspects of pedagogy in EfS include encouraging students to explore questions, issues and problems of sustainability, especially in contexts relevant to them and their communities.

The socially-critical nature of EfS has been addressed by authors such as Beddis and Johnson (1988), Symons (1996) and Jickling and Spork (1998). These writers argue that participation in EfS is not stimulated by cognitive realm, but is dependent on personal motivation and a sense of responsibility that results from the development of a personal ethic. The nature of the debate about sustainability means that students will be faced with a number of diverse, but linked, issues such as poverty and consumerism. Thus it appears that there is little benefit in presenting students with

large amounts of information about what impacts upon sustainability; rather, we need to challenge their thinking about issues such as consumerism in a way which forces them to make value judgments about such questions.

EfS is a relatively new educational concept, but as Bourn (2002) suggests it is emerging as major item for debate. Furthermore, although most writing about EfS relates to its implementation in the primary and secondary sectors of education, as a holistic concept it can equally be delivered at the tertiary level or through non-formal education (see, Sterling, 2001)

Education for Sustainability and Cooperative Education

Toakley and Aroni (1998) state that EfS must involve everyone, and take place formally in schools and institutions of higher education, and informally through the media, community organizations and with computer-based information sources; government and industry must also be involved. Cooperative education which involves students in initial training in an academic setting, followed by workplace experience and a return to the academic forum, could be uniquely positioned to tap into the concept of EfS. There are three ways in which EfS and co-op might link. First, is the United Nations (2002) proposal of using experiential learning as a means of delivering on EfS; second, the notion of cooperative education students gaining exposure to EfS in the classroom first and bringing knowledge and values about EfS into the workplace; and, third, the integration of workplace-based knowledge of EfS back into students' classroom learning when they return to classes after their work placements. We discuss each of these propositions in turn.

Learning about Education for Sustainability in the Workplace

As noted above the report on the United Nations (2002) world summit on sustainable development indicates an implicit appreciation of the value of cooperative education, in particular the experiential learning aspect of cooperative education, seeing this as a means of developing workplace partnerships and training programs. Partnerships of this nature represent core business for cooperative education practitioners. In principle the use of cooperative education to facilitate the learning of EfS is no different to education about other topics and many authors have argued that 'learning by doing' that characterizes cooperative education is effective. For example, Eames's (1999, 2000, 2003) work shows that learning does occur (in a variety of ways), whether deliberate or not, and that learning can be enhanced in a variety of ways such as setting of placement objectives, and reflection in action. But the notion of linking EfS with a 'conventional' work placement (i.e., which typically has other content-specific learning objectives) might cause some problems. This, the authors argue, is because the aims and objectives of work placements in, say an engineering or science program, may well be unrelated to – or indeed seen to be in opposition to – the notion of EfS. Interestingly, however, Eames (2003) has argued that an important part of

the learning that occurs in placements involves enculturation of newcomers into a ‘community of practice’, in an apprentice student-master type of relationship. Clearly then, learning about values in the social context of the placement, including those related to sustainability and EfS, may form part of an enculturation process. This is undoubtedly socially-situated, but would allow students and near-graduates to examine and reflect upon EfS issues as part of a holistic workplace-based learning process within a cooperative education program. In which case EfS may be seen to be part of a more ‘complete’ education in which the student reflects upon the social values present in the particular workplace context. This is likely more relevant and important for some disciplines of inquiry, namely, those strongly associated with consumption of materials or for which significant environmental impact might occur, such as engineering, the sciences, and management studies.

‘Teaching’ the Workplace about Education for Sustainability

Cooperative education involves integration of work and education. Hence the second proposal involves students taking their classroom knowledge, gained in formal education settings, into the workforce. Indeed a number of employers seek input and expertise from the tertiary education provider and, for example, expect and desire to strengthen links with academics (see, Coll, 1996). Students could be taught about EfS in specific classes, or as part of technology, management or related classes (see, e.g., Coll, 1997). This would serve to give students an overview of the notions of sustainability and point to, and make them more aware of, conflict between economic development and the seeming relentless drive towards mass consumerism, allowing students to take knowledge of such issues into their work placements. However, there are clearly potential problems in addressing issues of sustainable development in this manner within cooperative education (similar to those alluded to above) and particularly during the placement process. Students going on placement inevitably have to deal with a wide range of concerns. Amongst other things, they have to come to terms with a new working environment and all of the challenges that presents. Furthermore, they are expected to develop specific technical competencies and in many cases they have to produce an in-depth report on their placement experience. It might seem unfair to burden them having to grapple with issues of sustainability. There is also an issue of potential conflict. Manufacturing industries generally depend upon high levels of consumption, and multinational companies are heavily involved globalization. Advocates of sustainable development are often highly critical of these practices. Dwelling on the ethical issues behind these and other industrial practices while on placement could put students in a difficult position. Moreover, there are reports in the literature that suggest students like other beginners such as pre-service teachers (see, e.g., N. Taylor & Coll, 1999; Watters & Ginns, 1994), are reluctant to provide input into workplace knowledge structures. Such feelings of low self-efficacy and perceptions of status, contribute to students seeking to be unobtrusive and taking a ‘back seat’ approach, particularly in

the early stages of their placements (see, Coll, Lay & Zegwaard, in press; Fletcher, 1990, 1991)

Having said all of this, the issues which EfS raise are extremely important for the future well being of our environment and ultimately ourselves. Of those who graduate from cooperative education programs, many go on to hold key decision-making positions in industry. Some of these decisions will inevitably involve issues of sustainable development, and it would seem appropriate that the potential decision-makers of the future have all of the appropriate information available to inform their decisions; hence, it is not inappropriate for students to at least attempt to raise such important issues in their work places.

Integrating Education for Sustainability and Cooperative Education

It is often forgotten that cooperative education involves students bringing workplace knowledge back into the classroom after completion of work placements. There is thus considerable scope to consider issues such as EfS if, as the WACE definition suggests, students “bring their on-the-job challenges and insights back to the classroom for further analysis and reflection” (WACE, 2001, p. 1). It is easy to conceive of how this might occur with, for example, students reporting to appropriate classes (perhaps via case studies about their placements) about EfS issues encountered when on placement. In some senses this already happens; Coll (1997), for example, mentions the use of visiting lecturers or experts contributing their expertise (and values) to students. It would be fairly straightforward to use co-op students in a similar manner.

Discussion

What we have argued here is that co-op by addressing EfS is able to produce a more balanced graduate one with a greater understanding of the effect of business activity on people and perhaps a more socially-conscious graduate. This is in broad general agreement with a number of studies of ‘desirable’ graduate competencies. Marini and Tillman (1998) talk of a large USA-based survey conducted by the US Department of Education polling more than 3000 US manufacturers. This survey showed that employers rate attitude and communication skills highly, far more important than technical skills. Of course it may be that such skills are ‘taken for granted’, but the survey does highlight the fact that employers seek other skills than just technical skills. Such findings are reported worldwide with, for example, Burchell, Hodges and Rainsbury (2000) reporting that New Zealand employers of business co-ops and graduates seek graduates with more than simple technical ability (in spite of employers’ desire for students with high academic ability in these ‘technical’ areas). Employers are concerned to employ graduates with a balanced portfolio of skills including the so-called soft skills (Burchell et al., 2000), as also discussed by Calway and Murphy (2000) in Australia and in other disciplines as found by Coll, Zegwaard and Hodges (2001) for New Zealand science and technology graduate employers. Studies show employers seek thoughtful

graduates who can think outside simple task completion. This includes being aware of others, not just in one's local area, but in an international sense. As Burchell et al. put it: "In an increasingly global marketplace, networks and alliances will become more important for growing and maintaining businesses in the future" (p. 18). However, De Lange (2000) argues that non-technical skills need to be developed at least to some extent before co-op students enter the work place. De Lange talks about clusters of skills and identifies two such clusters that are consistent with the notion of EfS, namely, 'work related dispositions and attitudes' which include 'respect for property' and being open-minded; and 'self-management and personal style' which includes items of 'ethics', 'responsible' and 'integrity'. In a similar manner Canter (2000) talks about graduates needing to know how to "act in an ethical manner, demonstrating political, social and cultural awareness" (p. 44), and Page, Geck and Wiseman (1999) assert that co-ops need to be "grow in maturity and responsibility" (p. 44). Part of this issue then relates to organizational awareness (Burchell et al., 2000), and what might be deemed appropriate organizational behavior. Dunn (1999), for example, suggests that an appropriate student learning outcome from a co-op program is "students will observe and reflect on the behavior and structure of their co-op employer" and "students will use critical thinking to compare and contrast the pros and cons of the particular organizational behavior," going on further to comment that "students will articulate their observations and draw conclusions regarding organizational behavior and structure, and apply his [sic] knowledge in their professional development decision making" (p. 40). This is a quite provocative proposition and suggests that co-ops should be aware of and engage in ethical-behavior even if it is at odds with organizational values. This raises the whole issue of ethics in the workplace and in professional life. Reid (2002a, 2002b) has argued that in the engineering profession, it is essential that any educational program produces graduates that are aware of ethical issues, and know how to act in an ethical manner. Such a stance, Reid freely acknowledges produces the likelihood of conflict, but he argues that such conflict should not be avoided at the expense of inappropriate action and regrettable consequences for others.

If we are to think of EfS as a soft skill, a reasonable proposition since it is not obvious how it might be quantified like a technical skill, then this begs the question as to how it might be achieved. Most of the above authors argue that such attitudinal values are not achievable in a tertiary institutions, arguing instead that one role of the co-op placement is to help develop such skills (see, e.g., Canter, 2000). As mentioned above, students may be low in self-efficacy about suggesting change at the beginning of their placements (Coll, Lay & Zegwaard, in press), but one of the benefits of co-op is that students increase in confidence as a result of experiential learning stating that they see themselves as increasingly responsible in nature and able to communicate with employers and others (see, e.g., Canale & Duwart, 1999).

Mehta (1998) talks about the dynamism of Asia and quotes some extraordinary figures for growth, figures that must cause alarm for those concerned with EfS. For example, he states that "every three years China is installing a telephone network equal to the entire telephone system of Great Britain," and "Asia will be building 3000 new townships between now and the year 2010" (p. 64). These are staggering statistics and if correct raise serious issues with respect to EfS. Mehta uses such figures and his discussion of Asia's dynamism to argue for more internationalization of co-op, a suggestion supported by other authors (e.g., Coll & Chapman, 2000). An understanding of the principles of EfS by co-op graduates may help to at least consider issues of EfS and go some way to raising awareness of sustainability issues in the face of seemingly unbridled economic growth in the Asia-Pacific region.

Education for sustainability if delivered appropriately via cooperative education could clearly address some very important and sensitive issues. Furthermore, it could encourage students to question the values held by societies including the industries which service those societies. The question is whether there is a place for discussing these issues within the context of cooperative education. Clearly, those involved in research about sustainable development and EfS believe that it is, and it is interesting to consider the issue for those involved directly in cooperative education. Cooperative education could certainly provide a forum for discussing EfS issues. Any student taking up a placement in manufacturing industry will almost inevitably encounter issues of resource exploitation, pollution, patterns of consumption and in some cases globalization. These may not always be overt but they will form part of the context in which placement student's function. Many of the issues mentioned above could provide excellent subjects for analysis and reflection, which Eames (1999, 2000, 2003) points out, are essential features of learning in the workplace. Furthermore, such an approach might help address criticisms leveled at cooperative education for its lack of academic rigor (Grainger, 2001). For, while it is seen as an effective training strategy, cooperative education is discounted by some as an educational strategy (see, e.g., comments about this issue in Van Gyn, Cutt, Loken & Ricks, 1997).

This is not to say such a task would be easy to achieve. Freeland, Marini and Weighart (1998) point to a relevant issue of concern. They quote a study by Astin, Korn and Riggs (1993) in which it is reported that "in 1970, 39.1% of college freshman indicated that being well off financially was a life goal and an important reason to go to college; this figure climbed to 74.5% percent by 1993" (p. 18). It seems unlikely that such an attitude is confined to the USA and Mehta's (1998) summary of the incredible growth in Asia, which he rather optimistically views as 'dynamism', points to real issues for EfS.

Summary and Conclusions

The authors propose three potential modes of integrating EfS and cooperative education: *Learning about education for sustainability in the workplace*; *teaching the workplace*

about education for sustainability; and, integrating education for sustainability and cooperative education. This article is not intended to provide any particular conclusions about the compatibility or otherwise of EfS and cooperative education. Rather it is intended to inform readers of the concepts of sustainable development and EfS and hopefully spark some debate. Furthermore, it may provide a basis for research as to the views of the various stakeholders within cooperative education on this issue. Perhaps EfS is like environmental issues and issues to do with occupational safety and health: ignored for many years until legislative requirements forced industry, and indeed tertiary institutions, to conform. The authors posit that such a scenario for sustainable development is 'on the horizon'. As environmental concerns increase, EfS will become a more significant part of our education system. Certainly EfS has recently received a major boost within the UK education system with the introduction of the *Citizenship Curriculum* (Department for Education and Employment [DfEE], 1999), while in Australia the New South Wales Board of Studies has published an environmental education policy for schools with an accompanying guide for implementation (New South Wales Department of Education and Training [NSW DET], 2001). It makes sense then for cooperative education, seen by many to be an innovative learning strategy, to likewise lead in the education of this important concept. Particularly as many of its participants are involved directly in industries at the sharp end of the sustainability argument.

We think Phil Gardner provides a provocative insight into why the time for EfS in co-op has arrived. Gardner (1996) talks about needing men and women of conscience and "social responsibility" (p. 52), a sentiment echoed by Van Gyn (1996) when she discusses co-op in terms of Schon's reflective practice model. Gardner (1997) goes on to quote Strauss and Howe (1991), proposing a new image of a co-op graduate that is focused on the future, who is "more zealous" and who are concerned about social intolerance and delivering "values [and] coalitions that displace economic, class and racial self-interest" in order to reduce the "widening gap between the have and the have-nots within the US" (p. 86). We agree wholeheartedly with these sentiments and propose that using co-op to raise graduate consciousness of EfS is one means by which educational institutions and employers working together can help to shape a sustainable future.

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