Facilitation in Education *for* the Environment

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Abstract   The concept of education *for* the environment is well documented in the literature but is apparently less common in practice. Some of the reasons provided for this rhetoric-reality gap include: the controversial and political nature of the subject, the difficulty of empowering students into meaningful action, the challenge of using innovative methods, the difficulties associated with values education, and deficiencies in teacher preparation. Advocates of education *for* the environment encourage teachers to use student centred, experiential approaches yet provide little guidance to teachers on how to effectively utilise these approaches in their programs. There is a growing body of literature in the field of facilitation that is directly applicable to student-centred, experiential, environmental education. This paper will seek to demonstrate the relevance of facilitation skills, knowledge and experience to the effective implementation of education *for* the environment.

The Development of Environmental Education

The history of environmental education in Australia has been well documented (Fien, 1993; Fien & Gough, 1996; Gough, 1997) and this paper specifically focuses on the apparent acceptance of the terms education *in, about,* and *for* the environment[1]. Lucas (1979) first used these terms to characterise different forms of environmental education according to their program goals and to reduce the ambiguity of the term "environmental education". In more recent times, Fien and Gough (1996) provided a useful summary of the three terms. Educational programs *in* the environment aim to increase the students' awareness of particular environments by providing direct contact with the environment. Education *about* the environment helps students to develop knowledge to help them participate in informed debate, and encourage behaviour change and action. In contrast, education *for* the environment aims,

> to promote a willingness and ability to adopt lifestyles that are compatible with the wise use of environmental resources . . . [and] focuses on students working individually and in groups towards the resolution of environmental questions, issues, and problems. (pp. 205, 209)

Fien and Gough (1996) suggest that education *in,* and education *about,* the environment are only helpful if they provide skills and knowledge to support education *for* the environment. However, education *for* the environment is not a homogenous

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approach and no single definition will adequately capture the diversity that exists. There has been considerable debate in the literature regarding education *for* the environment (Fien, 1993, 2000; Huckle, 1986; Jickling, 1992, 2003; Jickling & Spork, 1998), and it is not possible to provide a complete summary in this paper. However, a few key distinctions will be noted.

Socially critical education *for* the environment "encourages the practice of just, participatory and collaborative decision-making and involves critical analysis of the development of the nature, forms and formative processes of society generally and of the power relationships within a particular society" (Fien & Gough, 1996, p. 214). This approach has an overt agenda of political literacy, values education, and social change: to create a new environmental paradigm, which promotes an ecologically sustainable, people-environment relationship.

A potential danger of socially critical education is that it may prejudge what the conclusions of critical thinking might be, instead of allowing students to develop their own conclusions (Burbules & Berk, 1999). In contrast, *liberal* approaches to education *for* the environment claim to not promote a particular worldview but rather they aim to teach students "how to think, not what to think" (Jickling, 2003, p. 22). Jickling and Spork (1998) argue that socially critical education *for* the environment is deterministic and they raise questions about whose values the environmental education will be for. Moreover, they claim that students who participate in cultural criticism and reconstruction and "have their minds opened to alternative worldviews might paradoxically find sufficient grounds to reject" the prescribed views of a socially critical education for the environment (Jickling & Spork, 1998, p. 319). In response, the advocates of socially critical approaches would consider the liberal approach naïve because values are unavoidably "shaped by the material circumstance within which people live; circumstances sustained by powerful interests who can easily co-opt the ecological message and turn it to their advantage" (Huckle, 1986, p. 6). Fien (1993) argues that if socially critical teachers use a framework of committed impartiality (Kelly, 1986) when discussing controversial issues they can avoid the dangers of indoctrination raised by those in the liberal camp.

Education *for* the environment has also been criticised for being too anthropocentric (N. Gough, 1987; Jickling & Spork, 1998) and Gough presents an alternate model of learning *with* environments based on an ecocentric worldview. However, this approach has not received widespread attention in the literature despite its potential merit. In closing this brief and imperfect summary, despite the criticisms[2] and differences it would seem that the terms *in, about,* and *for* have been stimulating and productive tools for helping people to conceptualise, critique, and debate the merits of environmental education. Regardless of how education *for* the environment is conceptualised and implemented both the *liberal* and *socially critical* approaches are problematic in practice. The next section will outline some of the challenges of education *for* the environment[3] in practice.

The Challenges of Implementing Education *for* the Environment

The literature notes that there is often a discrepancy, a rhetoric-reality gap, between the intended objectives of education *for* the environment curricula and its actual teaching (Fien, 1993; Spork, 1992). Research into the causes of this discrepancy with primary school teachers found the main reasons cited were: a lack of time, resources, knowledge and skills; compounded by a lack of knowledge of school regulations on such activities (Spork, 1992). A review of the literature on education *for* the environment suggests there are other possible explanations, which will now be discussed.

Dangerous Knowledge and Political Controversy

Education *for* the environment is involved in the promotion of "dangerous knowledge" because of its counter-hegemonic tendency to challenge the way that schools may function as agencies of economic and cultural production (Maher, 1982, 1985, 1986 cited in Fien, 1993; Fien & Gough, 1996). For this reason, education *for* the environment can be intimidating for teachers because it challenges the dominant social paradigm and some members of the school community may react negatively (Fien, 1993).

Moving from Theory to Action

One of the defining attributes of education *for* the environment is the aim to equip students for action. However, Stevenson (1987) explains that despite the goal of empowering politically literate students into action, the reality is that in many schools, students still assume "the passive position of spectators and recipients of other people's knowledge and thinking" (p. 76). There is still "much ignorance about the ability of education to produce active and effective citizens" and there is a need for a stronger emphasis on the "competencies and skills required for the effective obligations and duties of citizenship" (Saha, 2002, pp. 1, 3). Finding meaningful ways to empower students to action is an ongoing challenge for teachers in education *for* the environment.

Effective Practice

Education *for* the environment requires teaching strategies consistent with its goals (Fien, 1993). The Belgrade and Tbilisi international agreements (UNESCO-UNEP, 1976, 1978) encourage teachers to use a broad range of teaching and learning techniques emphasising practical activities and first hand experience. Bélanger (2003) calls for new *pedagogies of environments* because teachers cannot expect to engage individuals through passive learning and he warns teachers to ensure "the *media* is not betraying the *message*" (p. 84). Research by Kyburz-Graber (1999) concurs that "critical environmental education is a challenge to our school systems and to traditional routines of teaching and learning" but success will be determined by teachers' ability to. create a "critical teaching-learning culture" (p. 431).

Values in Environmental Education

Research has found that environmental educators do acknowledge that their "actions are guided by and make sense in relation to a personally held system of beliefs, values, and principles" (Hart, 2003, p. 54). The liberal and socially critical approaches to education *for* the environment, have different ideas on values education. The liberal orientation advocates the use of democratic principles to expose students to the plurality of environmental ideologies, so that students can develop and defend their own environmental ethic (Stevenson, 1987). On the other hand, Fien (1993) contends that socially critical education *for* the environment should influence the values and attitudes of students so that they develop an environmental ethic based on eco-socialist principles. The challenge for teachers operating from the socially critical perspective is to help students develop an eco-social environmental ethic without indoctrination. Regardless of which approach teachers adopt, values education is problematic.

Challenges in the Preparation of Teachers for Environmental Education

Problems in the preparation of teachers for environmental education are well documented in the literature (Bowen, 2002; Heimlich et al., 2004; Jenkins, 1999/2000; Lane, Wilke, Champeau & Sivek, 1995; McConnell, 2001; McKeown-Ice, 2000; Morgado, 2004; Scott, 1996; Spork, 1992; Working Party on Environmental Education, 1993). As

early as 1987, it was noted that "few, if any, teacher training programs adequately prepare teachers to effectively achieve the goals of environmental education in their classrooms" (Wilke, Peyton and Hungerford, 1987; cited in Fien 1993, p. 1). Research by Spork (1992) strongly indicated that the deficiencies in teacher preparation may have much to do with the discrepancy between the theory and practice of education *for* the environment.

More current research conducted in five OECD countries (cited in McKeown-Ice, 2000) found that teacher training is the weakest point in environmental education. In her own study, McKeown-Ice (2000) found that environmental education in pre-service teacher education programs: was not institutionalised, its implementation varied greatly, and the institutions were not preparing future teachers to effectively teach about the environment.

A recent study (Heimlich et al., 2004), exploring how environmental education might be better incorporated into teacher preparation programs in the USA found that the biggest barrier to environmental education content is not a lack of interest, expertise, or relevance but a lack of mandates at the political level. Research on teacher education in New Zealand by McConnell (2001) also reported the need for a change in the political climate recognising the need for environmental education. Part of the problem in teacher education may also be that,

> many teachers received their education and pre-service training long before interdisciplinary courses in environmental studies were available and before socially transformative approaches to teacher education, which have the potential to empower teachers to work for constructive social change, were developed. (Fien, 1993, p. ix)

The next section will explore some pedagogical strategies that may help practitioners to feel more confident about tackling these challenges.

Skills, Knowledge and Processes when Practising Education *for* the Environment

In outdoor, experiential programs there is acceptance that different kinds of programs require different levels of leadership expertise. Outdoor, experiential programs can be classified according to program aims along a continuum ranging from: *recreational, educational, developmental,* to *therapeutic* (Priest & Gass, 1997; Ringer & Gillis, 1995). At the "deep" end of this continuum, developmental and therapeutic programs help participants to examine their behaviour and improve their level of psychological functioning. Suffice to say that the leaders of developmental and/or therapeutic experiential programs need to have a higher level of leadership skill, knowledge and experience in order to safely and effectively manage the group processes. Similarly, education *for* the environment curriculum challenges the values, beliefs and behaviour of students and the requirements on teachers to care for students in the process is demanding. Metaphorically speaking, education *for* the environment is very much the deep end of the environmental education pool. The additional expertise required by teachers to take students into the deep end should not be taken lightly and may potentially explain why some teachers hesitate to "go there" with students. Research by Jenkins (1999/2000) indicates that the lack of professional preparation in the pedagogy of environmental education was one of the perceived constraints of future teachers to the implementation of environmental education. This section will review some strategies and processes that may assist teachers to overcome some of the challenges of implementing education *for* the environment curriculum.

Experiential Education and Facilitation

Experiential education provides an ideal platform to develop critical thinking, self motivated, problem solving individuals who participate actively in their communities. Itin (1999) describes experiential education not as a method but as a,

> holistic philosophy where carefully chosen experiences supported by reflection, critical analysis, and synthesis, are structured to require the learner to take initiative, make decisions, and be accountable for the results, through actively posing questions, investigating, experimenting, being curious, solving problems, assuming responsibility, being creative, constructing meaning, and integrating previously developed knowledge. (p. 93)

The successful implementation of experiential education approaches in education *for* the environment may require many teachers to develop stronger facilitation skills, knowledge and experience. Tinkering experimentation with new teaching strategies may not be enough and in writing about facilitation, Schwarz (2002) explains,

> you not only need a set of methods and techniques but also an understanding of how and why they work ... you see the reasoning that underlies each technique and method ... you can improvise and design new methods and techniques consistent with the core values. (p. 9)

In a review of the literature on facilitator education, Thomas (2004, 2005) found that most of the approaches to facilitator education in the literature seem to roughly fit into one of the following broad dimensions:

- *Technical facilitator education* approaches, which are skills-based and formulaic in style;
- *Intentional facilitator education* approaches, where practice is grounded in theory and justifications for particular interventions are provided;
- *Person centred facilitator education* approaches, which specifically emphasise the attitudes, personal qualities, and presence of the facilitator; and
- *Critical facilitator education* approaches, which emphasise awareness of the political nature of facilitation and the effects on all participants.

The relationship these dimensions have to each other is shown in the nested boxes model shown in figure 1. The dimensions portrayed in the larger boxes are considered to be extensions of the dimensions portrayed in the smaller boxes nested inside them. In this respect, the model implies "that a dimension portrayed in a larger box covers much of (but not necessarily all) of the content or foci of the preceding dimension. There is also an implied progression in the depth and complexity of the facilitator education process" (Thomas, 2005, p. 529). This model suggests that critical facilitator education, the level most applicable to education *for* the environment, must also help facilitators to develop mastery of the skills and knowledge in previous levels. However, literature on facilitation skills, processes and knowledge is noticeably absent from the environmental education journals and texts. A literature review by Thomas (2004, 2005) suggests that neglecting to develop basic levels of facilitation competence will impair the ability of teachers to operate at that critical facilitation level. For teachers who want to increase their effectiveness, the literature in the area of facilitation (for example, Heron, 1999; Hogan, 2002, 2003; Hunter, Bailey & Taylor, 1995, 1999; Schwarz, 2002) and experiential education (for example, Beard & Wilson, 2002; Itin, 1999) may be helpful. The theoretical frameworks, skills and processes described in the literature may help teachers to confidently deliver student-centred curriculum.

Critical Facilitation

In a paper expounding the value of critical facilitation, albeit in an organisational context, Kirk and Broussine (2000) encourage facilitators to develop a strong political awareness. They maintain that a critical facilitator is "aware of his or her own limited awareness, actively and openly works with what they think is going on in themselves, in the group and wider system. They will do this vigorously, but cautiously, realising their own partiality" (p. 20). To help facilitators practice with confidence and authority, despite their acknowledged limited awareness, Kirk and Broussine provide some practical suggestions easily applicable to education *for* the environment. They encourage teachers to: acknowledge their partial awareness and accept that they are not fully aware of all perspectives or influences; engage in reflective practice and give attention

FIGURE 1: Dimensions of Facilitator Education (Thomas, 2005, p. 529, used with permission)

to their own development; practice *reflexivity* which means "actively noticing in the moment, during the facilitation, what seems to be going on in themselves and in the group, and intervening or not as a consequence" (p. 20); and acknowledge the complex, unpredictable, surprising nature of their role. In summary, environmental educators should be encouraged that the facilitation literature describes an approach to facilitation that is directly applicable to the successful implementation of education *for* the environment.

Teaching Controversial Issues

A number of authors (Clarke, 1992/93; Jickling, 2003; Kelly, 1986; Thomashow, 1989) have specifically addressed the difficulties associated with teaching controversial issues. Thomashow (1989) suggests that teaching controversial issues requires discretion, patience and perseverance and he encourages teachers to fully consider their motivations, objectives, and educational vision before they "straddle the abyss" (p. 70). He recommends that teachers can increase their effectiveness by creating a *community of controversy* which,

> allows diverse groups to express their views ... solicits the participation of those individuals and interest groups that are key actors in the discourse that surrounds an issue ... establishes communication rules ... [and has a] shared understanding of the purpose of the project. (p. 69)

Those teachers inclined towards liberal education *for* the environment approaches would appreciate Clarke's (1992/93) approach to teaching controversial issues. His *Demystification Strategy* provides a framework for the teaching of controversial issues. The method he outlines is essentially a student-centred, inductive method facilitated by the teacher. The method specifically seeks to discourage one-sided arguments or ill informed opinions and the four steps are outlined below:
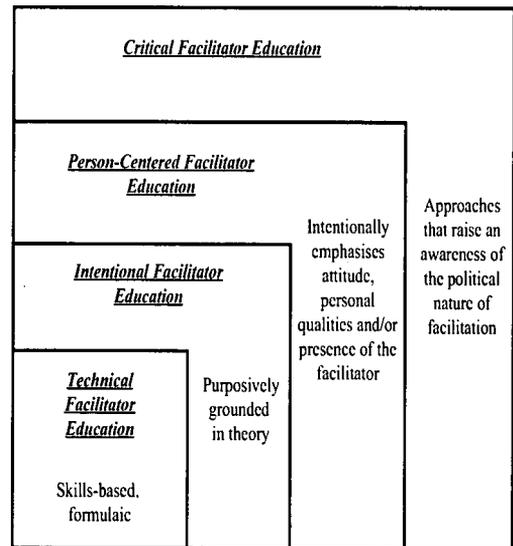
1. What is the controversy about? Does it turn around values, information, or concepts? Establishing this with students helps to determine the heart of the issue.
2. What are the arguments? Students consider the arguments supporting various positions and establish what criteria are being used to make judgements.
3. What are the assumptions? Not all positions are valid if their arguments are based in prejudice or other flawed assumptions. At this stage crucial matters of principle are employed to determine the validity of a position. Students are also encouraged to consider the voice behind the argument.
4. How are the arguments manipulated? Who is involved and what are their interests in the issue? Students are helped to develop media literacy in order to explore how arguments can be manipulated (pp. 10–11).

The challenge of good education, according to Jickling (2003), is to embrace controversy and he recommends the following guideposts to assist teachers:
- embrace ambiguity and acknowledge multiple realities;
- build in indeterminacy, seize opportunities to disagree and explore divergent opinions;
- be fair, and actively seek alternate views;
- be a citizen too and walk the talk;
- select issues carefully and be aware of overloading with personal preferences; and
- be courageous and walk that tightrope between education and advocacy.

Kelly (1986) uses the term *committed impartiality* to describe what he considers to be the most defensible approach for teachers to adopt when discussing controversial issues. He encourages teachers to:
- clearly state their own views but not attempt to convince students of the superiority of their own positions;
- judiciously consider the best timing and tone to reveal their views to students;
- not avoid emotions, but embrace their potential to animate the students' search for truth and their ability to compel students' actions;
- praise reasoned oppositional viewpoints;
- push students to critique the teachers point of view; and
- publicly engage in self-critique and critique students that parrot them.

Lessons from the Emerging Field of Environmental Communication

Environmental communication is an emerging field with professional networks, refereed journals, conferences, dedicated university courses and research centres. Environmental communication has been defined as a "two way social interaction process enabling the people concerned to understand key environmental factors and their interdependencies, and to act upon related problems in a competent way" (Oepen, 2000, p. 41).

Research in this field indicates that "in-depth knowledge about and personal feelings towards environmental issues must be accompanied by skills with respect to appropriate forms of action which promote self-confidence and participation in environmental issue-solving" (Oepen, 2000, p. 49). Oepen's recommendations for environmental communication also have relevance to education *for* the environment. They include: making great efforts to understand and master the language, terms, rationales, mental images, historical and social context of your audience; using powerful role models where possible; recognising that you cannot learn for someone else; making better use of experiential learning; borrowing from the methodological experience of related fields; and providing more training and education to teachers.

Implications for Environmental Education Teacher Preparation

There have been some positive initiatives addressing the perceived inadequacies in environmental education teacher preparation (Fien & Maclean, 2000; McKeown-Ice, 2000; Morgado, 2004; Working Party on Environmental Education, 1993). The highlights include the development of collaborative support networks, the development of new approaches to program delivery, and programs to help teachers to develop specific pedagogic capacities. Despite these developments, perhaps education *for* the environment is better suited to more experienced teachers, meaning in-service programs for experienced teachers may be the best approach to teacher preparation in the future. It is possible that novice teachers have enough challenges to manage without the extra pedagogical demands of education *for* the environment outlined in this paper. Some research in this area would be useful.

It is not the contention of this paper that all problems in the implementation of education *for* the environment will be resolved by better equipping teachers with the skills and knowledge to facilitate student-centred, experiential methodologies. However, this paper will hopefully help teachers to be better informed about some alternate pedagogies. Further research is required to explore the role of pedagogic competence on the efficacy of teachers implementing education *for* the environment.

Acknowledgements

Endnotes

1. Some authors (e.g., Fien, 1993) have used the term "through" rather than "in".
2. For a more detailed critique see Bowers (1991), Fien (1993), Gough (1987), Jickling (1991), Jickling and Spork (1998).
3. For the purposes of this paper future references to the term "education for the environment" are understood to include both of these approaches, unless specified otherwise.

References

Beard, C., & Wilson, J. P. (2002). *The power of experiential learning: A handbook for trainers and educators*. London: Kogan Page.

Bowen, M. (2002). Teaching green: Education as if the environment matters. In J. Zajda (Ed.), *Society and the environment: Teaching SOSE* (pp. 45–61). Melbourne: James Nicholas.

Bowers, C. A. (1991). The anthropocentric foundations of educational liberalism: Some critical concerns. *Trumpeter, 8*(3), 102–107.

Burbules, N. C., & Berk, R. (1999). Critical thinking and critical pedagogies: Relations, differences, and limits. In S. P. Thomas & L. Fendler (Eds.), *Changing terrains of knowledge and politics* (pp. 45–65). New York: Routledge.

Bélanger, P. (2003). Learning environments and environmental education. In L. H. Hill & D. E. Clover (Eds.), *Environmental adult education: Ecological learning, theory, and practice for socio-environmental change* (Vol. 99, pp. 79–88). San Francisco: Jossey Bass.

Clarke, P. (1992/93). Teaching controversial issues: A four-step classroom strategy for clear thinking on controversial issues. *Green Teacher*, *31*, 9–13.

Fien, J. (1993). *Education for the environment*. Geelong: Deakin University Press.

Fien, J. (2000). "Education for the environment: a critique" - an analysis. *Environmental Education Research*, *6*(2), 179–192.

Fien, J., & Gough, A. (1996). Environmental education. In R. Gilbert (Ed.), *Studying society and the environment: A handbook for teachers* (pp. 200–216). Melbourne: Macmillan Education Australia.

Fien, J., & Maclean, R. (2000). Teacher education for sustainability: Two teacher education projects from Asia and the Pacific. In K. A. Wheeler & A. P. Bijur (Eds.), *Education for a sustainable future: A paradigm of hope for the 21st Century* (pp. 91–111). New York: Kluwer Academic/Plenum.

Gough, A. (1997). *Education and the environment: Policy, trends and the problems of marginalisation*. Melbourne: ACER.

Gough, N. (1987). Learning with environments: Towards an ecological paradigm for education. In I. Rowbottom (Ed.), *Environmental education: Practice and possibility* (pp. 49–67). Geelong: Deakin University Press.

Hart, P. (2003). *Teachers' thinking in environmental education: Consciousness and responsibility*. New York: Peter Lang.

Heimlich, J. E., Braus, J., Olivolo, B., McKeown-Ice, R., & Barringer-Smith, L. (2004). Environmental education and preservice teacher preparation: A national study. *Journal of Environmental Education*, *35*(2), 17–21.

Heron, J. (1999). *The complete facilitator's handbook*. London: Kogan Page.

Hogan, C. F. (2002). *Understanding facilitation: Theory and principles*. London: Kogan Page.

Hogan, C. F. (2003). *Practical facilitation: A toolkit of techniques*. London: Kogan Page.

Huckle, J. (1986). Ten red questions to ask a green teacher. *Education Links*, *37*, 4–8.

Hunter, D., Bailey, A., & Taylor, B. (1995). *The art of facilitation*. Auckland, New Zealand: Tandem Press.

Hunter, D., Bailey, A., & Taylor, B. (1999). *The essence of facilitation: Being in action in groups*. Auckland, New Zealand: Tandem Press.

Itin, C. M. (1999). Reasserting the philosophy for experiential education as a vehicle for change in the 21st century. *Journal of Experiential Education*, *22*(2), 91–98.

Jenkins, K. (1999/2000). Listening to secondary pre-service teachers: Implications for teacher education. *Australian Journal of Environmental Education*, *15/16*, 45–56.

Jickling, B. (1992). Why I don't want my children to be educated for sustainable development. *Journal of Environmental Education*, *23*(4), 5–8.

Jickling, B. (2003). Environmental education and environmental advocacy: Revisited. *Journal of Environmental Education*, *34*(2), 20–27.

Jickling, B., & Spork, H. (1998). Education for the environment: A critique. *Environmental Education Research*, *4*(3), 309–327.

Kelly, T. M. (1986). Discussing controversial issues: Four perspectives on the teacher's role. *Theory and Research in Social Education,* *14*(2), 113–138.

Kirk, P., & Broussine, M. (2000). The politics of facilitation. *Journal of Workplace Learning: Employee Counselling Today,* *12*(1), 13–22.

Kyburz-Graber, R. (1999). Environmental education as critical education: How teachers and students handle the challenge. *Cambridge Journal of Education*, *29*(3), 415–432.

Lane, J., Wilke, R., Champeau, R., & Sivek, D. (1995). Strengths and weaknesses of teacher environmental education preparation in Wisconsin. *Journal of Environmental Education, 27*(1), 36–45.

Lucas, A. M. (1979). *Environment and environmental education: Conceptual issues and curriculum implications*. Melbourne: Australian International Press and Publications.

McConnell, B. (2001). Teacher education in environmental education - Does it work? *Australian Journal of Environmental Education, 17*, 35–39.

McKeown-Ice, R. (2000). Environmental education in the United States: A survey of preservice teacher education programs. *Journal of Environmental Education, 32*(1), 4–11.

Morgado, F. (2004). Teachers, training, education, and social development. In U. Azeiteiro, F. Gonalves, W. L. Filho, F. Morgado & M. Pereira (Eds.), *World trends in environmental education* (Vol. 14, pp. 163-174). Frankfurt am Main: Peter Lang.

Oepen, M. (2000). Environmental communication in a context. In M. Oepen & W. Hamacher (Eds.), *Communicating the environment* (Vol. 7, pp. 41—61). Frankfurt am Main: Peter Lang.

Priest, S., & Gass, M. (1997). *Effective leadership in adventure programming*. Adelaide, Australia: Kinetics.

Ringer, M., & Gillis, H. L. (1995). Managing psychological depth in adventure programming. *The Journal of Experiential Education, 18*(1), 41–51.

Saha, L. J. (2002). Education and active citizenship: Prospects and issues. In J. Zajda (Ed.), *Society and the environment: Teaching SOSE* (pp. 1–13). Melbourne: James Nicholas.

Schwarz, R. (2002). *The skilled facilitator: A comprehensive resource for consultants, facilitators, managers, trainers, and coaches*. San Francisco: Jossey-Bass.

Scott, B. (1996). The environmentally educating teacher: Synthesis of an implementing theory for pre-service courses. *Australian Journal of Environmental Education, 12*, 53–60.

Spork, H. (1992). Environmental education: A mismatch between theory and practice. *Australian Journal of Environmental Education, 8*, 147–166.

Stevenson, R. B. (1987). Schooling and environmental education: Contradictions in purpose and practice. In I. Rowbottom (Ed.), *Environmental education: Practice and possibility* (pp. 69-82). Geelong: Deakin University Press.

Thomas, G. J. (2004). A typology of approaches to facilitator education. *Journal of Experiential Education, 27*(2), 123–140.

Thomas, G. J. (2005). Dimensions of facilitator education. In S. Schuman (Ed.), *The IAF handbook of group facilitation: Best practices from the leading organisation in facilitation* (pp. 525–541). San Francisco: Jossey Bass.

Thomashow, M. (1989). The virtues of controversy. *Bulletin of Science, Technology and Society, 9*, 66–70.

UNESCO-UNEP. (1976). The Belgrade Charter. *Connect, 1*(1), 1–2.

UNESCO-UNEP. (1978). The Tbilisi Declaration. *Connect, III*(1), 1–8.

Working Party on Environmental Education. (1993). *Environmental education: An agenda for preservice teacher education in Queensland*. Brisbane: Queensland Board of Teacher Registration.