A Report on an Ontario Secondary School Integrated Environmental Studies Program

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Abstract

In secondary schools in Canada, environmental education is rarely infused throughout the highly discipline-based curriculum. The various integrated environmental studies programs operating in a number of Ontario secondary schools, however, offer an alternative approach which bears some promise. In this paper, we provide a brief overview of the Ontario programs before turning to a case study of one such program, highlighting student perspectives. We conclude by discussing the promises and limitations of these programs, as well as constraints on their implementation.

Résumé

Dans les écoles secondaires du Canada, l'éducation relative à l'environnement imprègne rarement tout le programme d'études qui est grandement axé sur les disciplines. Les divers programmes d'études environnementales intégrées mis en place dans un certain nombre d'écoles secondaires de l'Ontario offrent cependant une approche alternative qui semble prometteuse. Dans cet article, nous donnons un bref aperçu des programmes ontariens et nous étudions ensuite un programme en particulier, en y soulignant les perspectives des élèves. Nous concluons par une discussion sur les promesses et les limites de ces programmes, ainsi que sur les contraintes de leur mise en œuvre.

While school-based environmental education practices across Canada are diverse, it is still unusual to find environmental education infused into all secondary school subjects or integrated so that the curriculum is organized not around subjects but interconnected issues and themes (Pike & Selby, 1999). More commonly, environmental education, if it occurs at all, is offered as an isolated elective course (often in science or geography) or as an extracurricular activity, and its existence in a school is frequently due to the efforts of one or

two committed teachers (Russell, Bell, & Fawcett, in press). The current political context in Ontario adds further challenges; teachers are faced with funding cutbacks, a mandate to change from a 5-year to a 4-year secondary system thereby limiting space for electives, and a "back to basics" curriculum which leaves less room for environmental concerns to be addressed.

Despite this context, integrated environmental studies programs continue to exist in Ontario secondary schools and, in some cases, to flourish. As the popularity of these programs grow, so too do calls for more research to bolster anecdotal evidence of their success. The Council of Outdoor Educators of Ontario, in particular, has done much work in publicizing these programs (eg., Henderson, Mehta, & Arnott, 1996), encouraging not only academic but practitioner research (Henderson, Mehta, & Elrick, 1996; Horwood, 1995; Mehta & Henderson, 1996).[1] In response, we offer a case study of one such program, highlighting student evaluations. In so doing, we attempt to not only offer a detailed description of the program but question whether such a program offers a viable alternative to traditional disciplinary-bound, classroom-based approaches.

Ontario's Integrated Programs

The first integrated environmental studies program (ESP) at the secondary school level in Ontario was created in 1981 (with important antecedents in the 1970s), but it is only in the past five or so years that such programs have become increasingly common in the province (Mehta & Henderson, 1996); currently, there are approximately 30 such programs in Ontario (Elrick, 2000). In these programs, students spend the full day with one group of peers and one or two teachers, as in elementary school, for a semester. An integrated approach involves grouping four or five subjects together to make a "package" (for example, from physical education, leadership, environmental science, geography, English, or co-operative education). Courses to be offered are selected by individual teachers based on their own areas of expertise (Henderson, Mehta, & Arnott, 1996), grade level (11 or 12 or a combination), course standing as "open" or "university/college preparation," relevancy, and often, whether courses focus as much on issues and skills as "pure" content (Barrett & Jupp, 2000, p. 12). Common components for many are one or two credits for co-operative education, whereby the secondary students teach elementary students what they themselves have learned in the program, or the secondary students apprentice in a job that has an environmental focus (Henderson, Mehta, & Arnott, 1996).

Recent changes to the Ontario secondary curriculum have impacted integrated programs. For example, more than half of the programs include environmental science as part of their package (Elrick, 2000), but environmental science was recently removed as a course due to the current government's hostility to environmental concerns and their desire to be seen promoting a "back to basics" curriculum. Also, the Ministry of Education is currently drafting guidelines for Interdisciplinary Studies which would address integrated programs; these guidelines are, as yet, unavailable and remain a source of concern (Barrett & Jupp, 2000; Elrick, 2000). In response to these changes, many of the integrated program teachers have been meeting to share ideas (Barrett & Jupp, 2000; Elrick, 2000). For example, the teachers recently discussed new requirements for students to do 40 hours of community service. Through discussion, they realized that much of what students already do in the integrated programs (for example, running the school recycling program, teaching elementary students, maintaining hiking trails) count toward these hours, in some cases fulfilling the requirement completely. Together, these teachers have also identified a number of other ways they can satisfy the new curriculum (Barrett & Jupp, 2000; Elrick, 2000).

To free the programs from timetable constraints, many are physically separated from the school itself (Horwood, 1994). For example, some programs operate out of portable buildings on school property, and others bus students off-site to nearby camps or natural areas (Jupp, 1995; Mehta & Henderson, 1996). Some also involve extensive travel both within Canada (Elvy, 1997) and beyond (Sorenson, 1995). Outdoor and experiential learning is emphasized, thus students in these programs usually spend the bulk of their time outside the classroom.

While there has been some research conducted on the Ontario programs, to date there has been nothing to rival Lieberman and Hoody's 1998 U.S. study of 40 schools (15 elementary, 13 middle, and 12 secondary) which had adopted what they called the EIC model—the Environment as an Integrating Context for learning. While Lieberman and Hoody's research focused on a somewhat different model (in that their chosen programs were not restricted to secondary schools, were often school- or grade-wide, and team-taught), their research reflects what teachers, students, and observers have been saying about the Ontario programs, namely that the programs:

- ground learning in authentic, "real world" experience,
- demonstrate links between subject areas,
- foster responsibility, collaboration, and a sense of community,
- increase and enhance student-teacher contact, and

- improve relations between students (Bozzelli, 1999; Henderson, Mehta, & Arnott, 1996; Horwood, 1994; Jupp, 1995; Simms, 1996).

Further, Lieberman and Hoody (1998) document a significant improvement in student performance in reading, writing, math, science, and social studies.

Through an examination of standardized tests, behavioural data, samples of curricular materials, student work, and interviews with teachers, administrators, and students, Lieberman and Hoody (1998) provide solid evidence that integrated environmental programs bear much promise. However, because of the design of their study (determined by their desire for a nation-wide survey), researchers were only able to spend just over one day at each of the 40 schools. In that period of time, they collected an impressive amount of data but were unable to amass the rich type of data generally associated with a case study. Further, because of their design, it appears that they were only able to survey or speak with approximately 10 students per school.

Our report can be seen as supplementary to Lieberman and Hoody's research in that it offers a more detailed description of a secondary school program with striking similarities: an experiential, community-based, interdisciplinary approach with the environment as the central integrating concept. Further, our report focuses on a qualitative analysis of student experience which has been recently noted as an area deserving more attention (Hart, 1999; Pivnick, 1999). While an individual case study (particularly one which highlights testimony of students who have chosen to enrol in this program and who thus do not represent the entire student body) may not necessarily provide generalizable results, it can offer detailed descriptions which may provide fertile ground for theory testing and generation, particularly when combined with insights from other related case studies (Feagin, Orum, & Sjoberg, 1991).

Methods

The second author, John Burton, has been teaching the ESP at Grey Highlands Secondary School in Flesherton, Ontario since 1993. The first author, Connie Russell, attended Grey Highlands in the late 1970s and early 1980s. From 1993 to 1996, she was involved intermittently, providing resources, occasionally acting as a chaperone on outings, and facilitating workshops (see Bell, Russell, & Plotkin, 1998). In 1997, we decided that to enhance the program, we ought to solicit student evaluations.

Our primary source of data for this particular paper comes from pre- and post-course questionnaires. In consultation with John, Connie designed two-page questionnaires (consisting of 14 items in the pre-course questionnaire, 16 in the post-course, with open-ended questions like "Why did you enrol in this course?" and "What did you like least about this course?"). Connie administered them on the first and last day of the ESP in 1997, 1998, and 1999. Students were informed that the questionnaire was voluntary, and that their frank assessments could help improve the program. Students signed their questionnaires to ease pre-course and post-course comparisons, but were assured confidentiality. As well, they were told that John would not see the results of the questionnaires until after final marks for the year were submitted. All students participated (22 in 1997, 25 in 1998, and 26 in 1999).[2] Connie thematically coded the questionnaire as well as responses to each question. Each student's response to the pre- and post-course questionnaires were compared as were the overall results of each year.

The questionnaire data was complemented by knowledge gained through our participation in the program as teacher and as researcher, casual conversations with students on outings, and review of student journals; while these other sources give us confidence that the questionnaire data accurately reflects student perspectives, we do not explicitly refer to that data in this paper. The quotes of students that follow, then, are gleaned solely from the questionnaires.

We dithered about whether to conceal the identity of the school and made our final decision after this paper was accepted for publication; we thus do not believe that this decision has tempered our comments.

Case Study: Environmental Studies Program (ESP)

Grey Highlands, located about 130 km northwest of Toronto, is a rural school of approximately 900 students, 95% of whom are bussed to school, some from as far away as 30 km. It is the only secondary school in the vicinity and thus must meet a diverse range of student needs. Students generally live in towns no larger than 2500 people or on farms, and most come from families long established in the area. Most students in the school are lower to middle class, and white. Since the majority of students have to "catch the bus" immediately after classes are dismissed, an after-school environmental program is not possible (Burton, in press).

Students in the ESP earn four grade 12 credits (one environmental science, one outdoor physical education, two co-operative education) during

the February–June semester. Because of a "grandfather" clause, environmental science can be taught until 2001; John likely will replace it with a new grade 11 Geography course that focuses on resource management.

Based in a portable building behind the school, students spend approximately 75% of the semester outside, on school property (102 acres of naturally regenerating farmland, mature forest, and wetlands), in the adjacent natural and human communities, and occasionally in remote locations in northern Ontario. Concepts in environmental science, outdoor recreation, and environmental education are learned during such activities as water testing, winter and summer camping, rock-climbing, cross-country skiing, snowshoeing, hiking, and a 16-day wilderness canoe trip in Temagami. Assignments include journal keeping, developing activities and lesson plans for co-op teaching, researching careers, final exams, as well as researching and presenting reports to the class on environmental science topics and various environmental issues. Students also participate in many action projects including running the school-wide recycling program, tree planting, letter-writing campaigns, trail maintenance, litter removal, waste audits, and impromptu efforts like assisting with a clean-up after a tornado hit the area in 1996. Students also receive First Aid certification, CPR training, and have an opportunity to earn "Level One" canoe tripping certification from the Ontario Recreational Canoe Association.

Given that students receive two credits in co-operative education, 20-22 days of the semester are spent teaching a total of approximately 1500 elementary students (JK - 8) from the feeder schools. The elementary students spend the entire day on the property and the ESP students lead co-operative and environmental games, facilitate outdoor recreation activities, conduct pond studies, and give interpretive walks. In preparation for their teaching assignments, they visit the property regularly, stopping at significant landmarks and interpretive signs along the trails, learning to identify dominant tree species and signs of animals, continually discussing with John and with each other how these could be used with the elementary students. Each student is also required to select a minimum of 25 environmental or co-operative activities and learn to facilitate each one with their classmates, getting feedback from John and their peers as they go along.

Given the very low ESP student/elementary student ratio (usually about 3 to 1), the students teach in teams. The ESP students take turns being group leader, usually three to four times over the semester; their responsibilities for the day include developing detailed lesson plans and acting as primary facilitator. Instruction on what to expect of elementary students and how to handle potential problems is provided by one of the teachers from

the neighbouring elementary school or by John. Further, each elementary teacher who brings a class for the day is asked to fill out a questionnaire at the end, offering feedback.

The ESP students find out about this program from a variety of sources (course calendars, local newspaper articles, guidance counselors, and teachers), but the majority of students over the past three years learned about the program from either friends or siblings who had previously taken the course. Indeed, 94% of students sought out information from past students prior to enroling. The word of mouth was overwhelmingly positive; according to one student, "there is almost a legend about the course." Students who had older siblings go through the program were particularly well-informed and were often urged by their parents to enrol. One student reported that the course "helped my brother mature and grow up and [my parents] thought it would do the same for me." Similarly, another said: "My brother took this course and he was always excited about it. So he got me excited about it. He usually doesn't get excited so it had to be good." No students had participated in a similar program before, although a few students did have camping experience.

In the first year, 1993, the program is said to have drawn, in the words of a former student, "mostly from an outdoorsy crowd, and from the Greenpeace wannabes," but over the years, the ESP has begun to attract a wider range of students (Barron, 1996, p. 32). In the past three years, 29% of these students reported prior involvement with conservation, environmental, or animal welfare organizations prior to enrolment in the course. While the program appeals to both males and females, there has been a gender imbalance. Over the past three years, 63% of the students have been male. (In 2000, however, the females outnumber the males.)

The program is voluntary. At Grey Highlands, all students indicate in February what courses they wish to take the following year; usually about 30-40 students sign up for the ESP. Students are then asked to complete an application form (asking them for medical information, parental permissions, previous relevant experiences, and reasons for enroling). Thus far, John has not had to use the application as a "weeding" tool beyond checking for prerequisite courses. A CDN$100 refundable reservation deposit must be paid in the fall. By the time the course begins the following February, only the most committed students have chosen to enrol. Over the past 3 years, enrolment has ranged between 22 and 26 students.

Reasons for enroling have been diverse. Some students wanted to spend a semester learning outside, experientially, in a non-traditional program. Others looked forward to the various field trips and learning outdoor

recreation skills. Others indicated their desire to learn about nature, environmental issues, and environmental advocacy. Some felt that the ESP would help them with their career goals (in fields like teaching or working with children, environmental science, conservation, forestry, policing, and ecotourism) and others felt it would help with their personal goals (including learning leadership skills, building confidence, and getting fit). The possibility of making new friends and working with a group was also attractive. For many students, the reputation of the course as fun and adventure-filled was a big part of its appeal.

Financially, beyond John's salary, the Board has not committed itself to the ESP, thus students are responsible for all costs incurred over the semester, mostly associated with field trips (Barron, 1996; Crosby, 1997). In 1993, the cost per student was CDN$550 but due to John's fundraising efforts, has decreased each year so that in 1999, the cost was CDN$400. While most students felt that the costs were not prohibitive (Barron, 1996), occasionally an ESP student has mentioned that a friend had chosen not to enrol because of the course fee. Concerned that the program be accessible, John has made efforts to attract funding from other sources as well as ensure that there are multiple fundraising opportunities for students. Indeed, in past years, a number of students have been able to raise the entire course fee by participating in all the fundraising events (Barron, 1996; Burton, 1998).

Student Perspectives

Three key themes emerged in the questionnaires as important to the students:

- experiential learning,
- interpersonal skill development, and
- personal growth.

Implicit, and occasionally explicit, in their comments is a comparison of the ESP and more traditional schooling.

Experiential Learning

Most students indicated that learning experientially, outdoors, was easier thus more effective for them than a traditional school setting. In the words of one student, "we actually did the things we were learning about, instead of just learning about it." She provided an example: "It is easier for me to learn about feeding relationships playing the part of the animals in a game, than reading it in a textbook." Similarly, other students said:

> In ways its easier because you're never in a classroom, you're always hiking or something but it was harder because I felt that I learned ten times more stuff than I would in a boring classroom.
> I found I dealt with the same amount of difficult questions, the difference being I was not dealing with the questions on paper but actually living them.

For others, that is precisely what made this program more difficult:

> People think this is an easy course because we are rarely in class and seem to be always having fun. But as an ESP'er, yes, it is really fun, but it is mostly experiential learning and also very physically demanding. But most people don't understand that.

> More is expected of you. It is your decision to do the proper thing and if you decide to do something you shouldn't, you feel so guilty about letting everyone down. In regular classes, you tend to just care about yourself and you don't care about what the teacher thinks of you, but this is totally different.

One student found the question of whether the program was easier, the same, or harder than traditional school "ridiculous." She continued on:

> This semester cannot be compared with regular class. I learned in a different way—maybe that was easier. But I learned more about me and life skills than any other class has ever taught me.

According to some students, teaching elementary students greatly helped them in their own understanding of course content. As one student wrote, "Teaching the students made it easier for me to learn and it will always be remembered." Others were excited by the responsibility given to them:

> [I liked] the trust we were given. With public school kids, with the wilderness atmosphere, our own meals. Wow! We were treated like we actually could think for ourselves!

Many students also valued that their learning felt authentic and meaningful:

> [What I liked best was] the chance to experience important things, instead of sitting in a class filling your head with information and no understanding.

> I liked that everything had a purpose and was needed or used during either the co-op with the kids or the canoe trip.

This feeling of purpose was enhanced by the fact that many students entered the program with personal or career goals. Particularly for those students who expressed interest in teaching or working with children,

the co-op sessions with elementary children were invaluable. In some cases, it confirmed a student's hunch that teaching might be an appropriate career, others were surprised to find that they enjoyed teaching and were pondering the implications of that insight, and still others found the thought of ever teaching children again absolutely horrifying!

Interpersonal Skills Development

Students appreciated the opportunity to hone their interpersonal skills. At the outset, a number of students wrote that they were nervous about group work and spending so much time with the same group of students, many of whom they did not know well, if at all. As one related later, "Usually if you throw 25 kids together, they wouldn't all get along but we did in this situation." Indeed, a number of students indicated that they were surprised by their fellow students. As one said:

> There were so many different types of people from different "groups." Half of the class I would never have talked to before this course. Now . . . they are my friends.

In a program more akin to the elementary model where students spend the entire day with one teacher and one group of peers, there is greater opportunity for students to get to know one another and more attention is devoted to learning how to work as a team. In the words of these students:

> It surprised me how well the class worked together. In most classes, the people are there to learn, not to work on dynamics. That is probably why [regular] class is not fun.

> I think its great spending so much time with these people and getting to know them for who they are, not just who you thought they were.

Many commented on how important their time together was in building their ability to work as a team, especially during difficult moments, like one unusually cold, mosquito-ridden canoe trip when tempers were fraying. A number believed that learning these skills would help them later in their chosen careers and personal life:

> I liked the amount of time you spend with the same group of people. This allows for the realization that each person has faults and that you do too. By seeing other people's faults, you find your own and work on it.

> [I learned] how to take care of others. To get along with everyone even if you feel they are wrong. [And] how much trust you really need in order to get through life.

> I learned a lot about myself, how I work with others, how to improve myself, how to be patient. How to be an important member of a team. All of those skills a lot of people never learn.

Personal Growth

A third theme raised by the students was personal growth. Many discussed their increased awareness and knowledge about nature, environmental issues, and environmental action. Others discussed opportunities to learn about and test skills needed in various careers. Others brought up more personal issues, particularly growth in self-awareness, learning patience, trust, and team-work, building self-confidence, and increasing their physical fitness. Here are some examples:

> I learned a lot about who I was and where I want to be in fifteen years. I learned how to deal with things without losing it. Also, I learned better leadership and communication skills.

> I'm not as shy anymore, doing the presentations helped me a lot, not just in class but every day.

> I learned so much about myself, how to better interact with people, to try new things, and to keep doing things you like, how to look at life in a much simpler way, not to let insignificant things bug me.

Most of these students went on to say that they had not experienced such personal growth in a traditional classroom.

A Caveat

When asked if they would recommend the course to others, all of the students in each year of this study said that they would do so; many concluded their post-course survey with phrases like "ESP Rocks!" or "ESP Rules!" Repeatedly, they mentioned the importance of experiential learning, the development of interpersonal skills, and the opportunity for personal growth. We do not wish to imply, however, that the students had no concerns. Students did become frustrated, at times, with one another and with John. Others complained that the ESP was not completely experiential and outdoors, and disliked that some classroom work and assignments remained. Having had a taste of a more student-centred approach, many students also desired more participation and control over the course. And others expressed concern and indignation that the course had a reputation as a "bird course" in some quarters.

Promises, Limitations, and Constraints

Building on the insights of the students in the ESP, there are four interrelated characteristics of this program, and integrated programs in general, that the two of us find particularly appealing: experiential learning, authenticity, connections to human and natural communities, and holism. First, the emphasis on experiential learning in a variety of settings has a better chance, we believe, to meet the diverse range of learning styles of students. As so many of these students indicated, sitting in a classroom taking notes off a blackboard about seemingly abstract concepts was either too challenging or too boring for them. Repeatedly, in the post-course questionnaires, students expressed their surprise at how much they had learned as well as how much of that learning they had retained. Horwood (1994, 1995) and Lieberman and Hoody (1998) also found experiential learning to be a vital component of the integrated programs they studied.

Second, students were engaged in "real-life" environmental and social projects lending a feeling of authenticity and purpose to their learning. Similarly, both Horwood (1994, 1995) and Lieberman and Hoody (1998) found that being involved in specific local issues gave students a sense of ownership and pride in their efforts, allowed them to feel that they were making a difference, and helped them make connections between what they learned in school and the world around them.

This participation in authentic projects relates to the third important characteristic: the attention to relationships both among humans and between humans and other life. Through intense interactions with one group of peers, teaching elementary students, and participating in community projects, students felt that they enhanced their interpersonal skills. Further, much of their learning was about, in, and with the natural communities of which these students are part, and many of their action projects were in service to these communities.

Fourth, this program takes a holistic approach. Cognitive learning is not the sole focus. Kinesthetic, affective, and sensory learning certainly occurs (see also Lieberman & Hoody, 1998) and we venture that moral and spiritual exploration and growth also can take place. A holistic approach is also evident in the interdisciplinary nature of this program, which is particularly important given that environmental concepts and issues are often complex and messy. As Rogers (1999) writes:

> Interdisciplinarity can respond to this "messiness" by beginning with the recognition that there is no single approach that will address the complexity of environmental issues. Indeed, interdisciplinarity assumes that

> there are a range of perspectives and information that will have to be integrated if this complexity is to be recognized. (p. 5)

When taken together, these four themes contain elements identified as important by some members of the Canadian academic environmental education community (Russell, Bell, & Fawcett, in press). For example, similar themes have emerged in calls for environmental education practices to be influenced by holistic approaches (O'Sullivan, 1999; Pivnick, 1997; Selby, 1999), natural history (Bell, 1997; Quinn, 1995), critical pedagogy (Fawcett, marino & Raglon, 1991; Lousley, 1999; marino, 1997; O'Sullivan, 1999), ecofeminism (Fawcett, marino, & Raglon, 1991; Russell & Bell, 1996; Selby, 1999), and environmental justice (Barron, 1998; Martil-de Castro, 1999).

More Caveats

We do not want to paint an entirely rosy picture, however. These programs are not perfect nor are they without constraints. One limitation of many of the Ontario programs, including this case study, is that they are still heavily based in sciences or geography and less focused on the arts. Part of that problem, in Ontario at least, is that most of these programs are not team-taught so are limited by the individual teacher's expertise and comfort level with various subjects. While we tend to agree with Horwood's (1995) suggestion that the actual cluster of subject areas is less important than providing opportunities for experiential learning, we still think that a truly interdisciplinary program is preferable.

Another difficulty associated with being a single-teacher program is the immense amount of work that falls on the shoulders of one individual (Ashton, 1998; Horwood, 1995; Pike & Selby, 1999, p. 21). There is a substantial amount of preparation required in getting the program initially off the ground, continually adapting it to comply with new Ministry of Education curriculum guidelines, changing Board priorities, internal school politics, and teacher contract issues concerning teaching and supervision time. Moreover, the amount of time required to organize it on a yearly basis is substantial. Indeed, John said that while he would enjoy teaching the ESP in both terms, he simply could not do so alone.

Fundraising represents a significant amount of that work since, as Ashton (1998) notes, funding is a perpetual problem. While students contribute financially to the program, they do not bear the full cost. Yet asking the Board for more funding may not be wise. Given the cutbacks to education in Ontario, financial independence may be essential to the survival of these programs. As Barron (1996) notes about this program:

> . . . public knowledge that the programme does not cost the board one penny has helped ESP to gain acceptance and support within the school, among staff, and with parents. It may be that independence is critical in helping integrated programmes avoid vulnerability to both criticism and budget clawbacks. (p. 33)

We agree with Barron's assessment while at the same time wishing to highlight that financial independence requires substantial effort on the teacher's part.

The numerous field trips, many of which are overnight (approximately 21 nights over the semester, including a 16 day canoe trip), also require a commitment beyond what many teachers can offer, particularly those with family responsibilities. Given the intense nature of these programs, it is not surprising, then, that Horwood (1995) asserted that opportunities for teacher renewal and support were vital for program sustainability.

Lieberman and Hoody (1998) indicate that team teaching may alleviate some of these problems by not only spreading the work between a number of individuals but also by providing opportunities for support. But team teaching, if narrowly understood as a "relay"[3] where teachers do not actually teach together, may jeopardize something many of the students greatly appreciated: the elementary model, whereby they spent the entire time with one teacher and with one group of students. Having two teachers full-time in one program to provide support, enhance interdisciplinarity, while still ensuring such continuity has occurred in Ontario with success (Bozzelli, 1999), but is uncommon and increasingly unlikely given the funding cutbacks.

Another challenge facing these programs is their non-traditional nature. While concerns that the ESP is a "bird course" certainly have lessened with time, there remains some resistance to the program among a few teachers and administrators who scoff at students' ability to learn content while outside, apparently only having fun. This skepticism is obviously being passed on to students since some of them did worry about the reputation of the course. Lieberman and Hoody's (1998) documentation of significant gains in student performance obviously offers one antidote to such concerns; research of this kind, based on Canadian programs, is much needed.

Finally, the time-limited nature of these programs is also a concern. Hobson (1996) reminds us that "[a]s it stands today, these programmes make up an extremely small proportion of a students' academic career" (p. 28). Following students as they returned from an integrated program to the traditional classroom, Hobson found that few of the students continued to be actively involved in environmental issues. One student told her that the program, in retrospect, was "like a vacation." While Hobson's findings may

reveal as much about the traditional classroom as the integrated programs, research of a longitudinal nature is necessary. Although many of the recent ESP students attested to the power of the program, we do not have such follow-up data yet. Also, in light of the growing interest in "significant life experiences" (Palmer et al., 1998), it would be interesting to ask former students, years hence, whether they believe that the program had a lasting impact on them.

A Conclusion

Much research needs to be done. Nevertheless, we are comfortable in asserting our belief that integrated programs such as the one featured here show promise. Paul Hart (1999), in presenting his findings on children's ideas about the environment, recounted a recurring theme in the stories of elementary students: that teenagers were self-involved and had no concern for others or the environment.[4] Our study offers a more hopeful glimpse of this often devalued age group.

The students in this case study had opportunities to learn experientially about and with their natural and social communities which, by their own reckoning, led them to hone interpersonal skills and grow personally. Interestingly, while the students did mention their increased knowledge about and commitment to environmental issues, what they most wanted to relate to us at the end of the program was their excitement at learning by doing, their interpersonal skills development, and their personal growth. As environmental educators, this does not trouble us. As Selby (1995) suggests, such learning may be an important step in students developing the necessary capacity for democratic, environmental citizenship.

Notes

[1] Since 1995, the Council of Outdoor Educators of Ontario's journal, Pathways: Ontario Journal of Outdoor Education, has devoted a column for teachers, students, and researchers to discuss these programs.

[2] From 1993 to 1999, there were also between 3 and 7 second-year ESP students who helped lead field trips, but who otherwise earned co-operative education credits outside of the program in an environment-related field. (Examples of positions included working with a conservation officer, with a forestry consulting company, and acting as a teaching assistant.) These students were not included in this analysis.

[3] Pamela Courtenay Hall suggested this phrase to us while arguing that, ideally, team teaching is collaborative.

[4] Interestingly, often the ESP students themselves complained about their peers in ways akin to Hart's elementary students. Many attributed their own growing interest to their participation in the the program. For a critical discussion of student apathy, see Lousley's (1999) ethnography of three Toronto secondary school environmental clubs.

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John Burton developed and teaches the ESP as well as science at Grey Highlands Secondary School in Flesherton, Ontario. He also has led canoe, hiking, and rafting trips throughout Canada, and has taught white water canoeing and kayaking. John has a B.Ed and an M.Sc in sedimentary geology from Lakehead University in Thunder Bay, Ontario.

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