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Bert Horwood
Queen's University

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Bert Horwood

Professor Emeritus,
Queen's University, Kingston, Ontario

An ethnographic study of a high school program showed three factors from the outdoor component that enhanced curriculum integration: the inescapable consequences of students' decisions in the outdoors, personal growth, and the sense of wonder experienced by students in their encounters with themselves and the natural world.

KEY WORDS: *curriculum, curriculum integration, educational research, case study, outdoor education, experiential education, high school*

Getting out there and doing different things. I think it's the best way to learn. No question about it. You can't learn from a book like that. ...[It's] the most valuable learning, I'm sure. (Student, U.P.)

Background

Introduction

Outdoor education is a marginal component of education in many mainstream schools. Teaching (and learning) outdoors is confined to occasional field trips in natural sciences or for recreational purposes. Inside the schools, teachers and administrators struggle with a curriculum that is fragmented into isolated subjects, and they make numerous attempts to combine them into a unified whole. Such attempts are generally called curriculum integration in the curriculum studies literature (Case, 1991; Jacobs, 1989). Recent successful attempts at curriculum integration in one high school included large blocks of outdoor education. This paper describes the influence that extended outdoor education had on the process of integration in that particular program.

The paper makes a series of related assumptions. First, curriculum integration is a desirable goal. As Case (1991) put it, who would want learning to be fragmented? Second, curriculum integration is an elusive goal. This assumption is evidenced by the numerous attempts in schools to achieve it and by the short life of most integration efforts. At the same time, outdoor educators are being challenged to justify their work within school systems (Brookes, 1993; Raffan, 1993). So far, there is neither compelling evidence nor convincing argument that outdoor education provides something of value that can not be obtained by conventional schooling. Research is needed to discover such evidence and arguments, if they exist. This investigation seeks to reveal a part of the unique contribution that outdoor education can make within the standard curriculum and is grounded in the conviction that it will be useful to both the field of curriculum integration and to the field of outdoor education to study the influence of outdoor components within a successfully integrated program.

A third assumption is that ethnographic methods have power to shed light on factors that influence student learning. The methods used in this research provide data that are treated as texts. The texts are a form of lived experience that is excavated for patterns from which it is possible to construct a description of relationships not previously described. The fourth assumption is that what students experience, and the meanings they build as the result of the curriculum are the

Bert Horwood, recently retired from leading the Outdoor and Experiential Programs at Queen's University in Kingston, Ontario, continues to work as an independent scholar and instructor. He can be reached at 269 Blenheim Terrace, Kingston, Ontario, K7M 4C8, Canada; (613) 389-2620, 374-3432; fax (613) 545-6584; e-mail: horwoodr@qucdn.queensu.ca

prime considerations of education. Based on these assumptions, I examined the reports and actions of students as they responded to the demands of the outdoor education components within an integrated curriculum. The account that follows is grounded on a students'-eye-view of their school program.

Context

I was invited to conduct an illuminative evaluation (Hamilton et. al., 1977) of an integrated curriculum package being offered for the first time in an Ontario high school. The package gave senior credits in Environmental Science, English, Physical Education and Life Skills. There was one teacher working with one class (7 females and 6 males) all day, every day for one semester. The framework for the evaluation was essentially ethnographic and constructivist.[1]

The first question to be addressed was, "What were the students' experiences of integration?" During mid-point interviews, students showed that putting school subjects together in time and space did not produce integration. Snowshoeing by map and compass to a wilderness lake to perform environmental measurements did nothing, in their minds, to integrate Physical Education and Environmental Science. But by the end of the program, students revealed a sense of connectedness and unity in their work. As detailed in the published reports (Horwood, 1993; 1994), the data revealed six factors in the program that transcended the school subjects and did lead to integration. The integrating factors were experiential learning, whole process, authenticity, responsibility, challenge and community.

Experiential learning means that instruction placed prime value on students having early, first-hand experience with every aspect of the program. In addition, the students were required to interpret their experiences and develop their own understandings of them. The power of experiential learning as an integrating factor was revealed at the end of the program by students, who commonly harked back to events from the first week of the semester.

Whole process refers to the experience of a reasonably complete sequence of events. For example, students sponsored a benefit concert by a folk-singer to raise funds. They had to prepare advertising and distribute it. They had to book and prepare the hall, sell tickets and get stock for the refreshment booth. Afterwards there were clean-up, accounting and thank-you letters to be written. Whole process contributed to integration because the sequence of work cut across any arbitrary subject matter lines. *Authenticity*, the experience that work in the program made a real difference in the real world, had a similar integrating effect. Students made speeches to civic groups and worked in research laboratories. They felt that their school work mattered in the world outside school, where most people do not make a distinction between the disciplines they use to complete a task.

Students reported that they had more *responsibility* to their teacher than in regular school. In addition, they keenly felt a new axis of responsibility to their classmates. In a similar way, the *challenges* in the program were much greater than usual. The demands of increased responsibility and increased challenge contributed to integration because they put pressure on the students to use all of their knowledge without concern to its relation to subject boundaries. A strong feeling of *community* developed in the class and made it possible for individual learning to become common property. As individuals began to appreciate the unique perspectives and strengths of classmates, personal boundaries began to blur, as did the boundaries between school subjects.

Having learned that these six factors were central in students' experiences of curriculum integration, a second question was

[1] Constructivism is a well-established approach to learning, whether from instructional or research experience, which emphasizes that meaning and understanding are constructed by individuals based on the interaction of their past experience and knowledge with the experiences of the moment. For more on constructivism, see Magnon (1977) and Doyle (1990).

considered: "What was the influence of outdoor education in creating and sustaining those integrating factors? I will show how the students' accounts of outdoor activities revealed the power of outdoor education to enhance curriculum integration by influencing the integrating factors previously identified.

There were three sets of interviews with individual students: one before the semester-long project began, another at mid-point, and a final interview several months after it ended. Parents of students were also interviewed three times, and three teachers in the host school who were not connected with the program were interviewed twice. The researcher and an assistant acted as field staff members and made field notes as participant observers. Students submitted their journals for analysis. Video-taped evaluative statements by students in both the first and second years of the program were included as further data. The teacher's plan book completed the data set. All procedures were subject to ethical review.

The recorded interviews, statements, and field notes were transcribed and analyzed independently by two people looking for patterns and critical incidents relevant to the research questions. Preliminary findings from student data were cross-checked and confirmed before being tested for consistency and compatibility against data from sources other than students. Finally, findings were validated by the teacher of the program.

Results of this study are illustrated by quotations from students' videotaped evaluative statements made at the end of the semester. These quotations are icons for the complex of other evidence in interview transcripts and field notes, which are too voluminous to report in full. Students' voices are the only ones given, because students' experiences, as they articulate them, are the central part of this research. The quotations selected are like the pottery shards chosen by an archeologist to illustrate the evidence for the inferences being drawn about the culture being studied. Each student quoted is identified by a pair of initials coded to preserve confidentiality.

Results

Outdoor education events took more than one-third of the school time in the semester. The actual time in outdoor education is hard to calculate precisely, because a normal school day occupies students for about seven hours, including homework, whereas most of the outdoor events engaged the students 24 hours a day, plus preparation time. There were 11 single-day events (no overnight experience) and four extended expeditions: a winter base camp (five days), backpacking (five days), cycling and climbing (five days), and a white water canoe trip (10 days). The outdoor excursions included field work connected with the school subjects being integrated in the package.

It is one thing to put school subjects together by administrative fiat; it is quite another for students to integrate their learning (Horwood, 1994). There is evidence that students did experience integration:

> . . . in [this class] everything you learn is connected to you. So, when we wrote our resume, that was a piece of you; when we did our [magazine] interview, that's you, your thought processes, all you. So I feel that all the learning was connected. And what will make this learning extra special is that, and what will make it stay with you is that all the triumphs and the memories and the hardships that went along with learning. (S.L.)

Patterns in the data show that there are three main ways in which the outdoor experiences influenced integration. These are inescapable consequences, personal growth, and the sense of wonder. The single most revealing and concise evidence for these factors comes from student evaluative statements recorded on videotape at the end of the course. A few exemplary statements will be given to support each factor.

Inescapable Consequences

In the normal course of school days, students are able to escape or soften the consequences of their actions (or inaction). But

in sustained outdoor trips, where the class is engaged 24 hours a day for five or ten continuous days, there is nowhere to hide and no one to intervene. The consequences of good or bad planning, for example, become obvious without evaluative comments from the teacher. Mutual support in the face of an indifferent and implacable environment enriches the sense of community. Isolation from other friends and parents eliminates shields the student might otherwise use to escape consequences.

Three examples of mutual support were often cited by students: team work, packing for trips, and sleeping in snow shelters. The statement by T.N. also illustrates how several factors may be mentioned within a very few words.

> If we hadn't worked as a team we wouldn't have got over the wall, we wouldn't have built that bridge... when we built snow caves, I figured, "Well, I'm going to freeze." And then my roof collapsed.... I would have had to sleep outside, but thank you girls for letting me use your cave to sleep in. (T.N.)

> The Highland Trail Hiking trip was... a challenge. The big heavy packs on your back. And it was a good trip and we learned...packing and stuff like that. And...[for] all the trips I packed pretty well. And it was really good to know, "Oh yeah, I didn't forget this." And well, I never really said..."I should've done this or could've got along without this." (U.P.)

> In order for the group to function properly, you have to put away your dislike of people. And so work with them. (E.P.)

Personal Growth

The students experienced personal growth during outdoor work as a concomitant of school learning. Kinds of learning that were normally separated happened together in the outdoor settings. The extremely challenging expeditions demanded extension of self-imposed physical, emotional and intellectual limits within a supportive community.

One student described an aspect of his growth as it was inspired by hearing stories told by an old-timer in the community:

> I know [his stories] affected the way that I work. And now, when I mow the lawn, I stay for an another 15 minutes before taking a break. Or I go another hundred metres on the portage, or I whistle a happy tune while standing in the rain. All because his stories inspired me and gave me a neat perspective and attitude towards work. (K.N.)

Another student, whose remarks were articulate and positive, described the extension of limits she experienced in response to challenges:

> Just by taking this course, each and every one of us has dared to be different. And I think that's important 'cause that's the way you grow. That's the way that you can expand yourself to the full extent....You also look at challenges in a new way now, I find. [If] there's a challenge in it, you don't look down on it...there's not this little voice telling you that, "Uh, I dunno if I can do it." You know? You know you can. You conquer your fears...and teamwork, cooperation help. (...I never thought that we'd work so well together.) It's...pushing yourself to your limit. You often find that, many times I've said, "Do I have limits? You know, even after 75 km of bike riding, do I really...is there a limit? Like where is it? Far ahead." You find out that it's way further ahead than you thought it was. (S.L.)

The same student told how she recognized that she lacked qualities she had previously thought she possessed. This illustrates an aspect of personal growth in which

increasingly accurate assessments of one's status result in lower but more realistic expectations. Loss of self-deception is an especially poignant part of personal growth.

> I realized that I am capable of great physical feats.... I also learned that I think maybe I'm more of a... wannabe leader than an actual leader, as I thought I was. I'm more of a wannabe type leader. But I'm trying. (S.L.)

Sense of Wonder

Students commonly expressed surprise or amazement at events or people. Their expressions were occasionally poetic and often heartfelt. I call this "the sense of wonder." New experiences in natural settings contributed to the sense of wonder.

Two quotations illustrate wonder-like responses to outdoor events. The silence and darkness of the snow cave and an encounter, shared by almost the entire class, with a Grey Jay (locally called "whiskey jack") are typical. Students claimed that these feelings are unforgettable.

> Being in a snow dugout at night is an experience in itself, totally quiet and dark, cut off and independent, with nothing to do but sleep, talk and think, or eat. I noticed that it's a great place just to lie and wonder. (K.N.)

> What really sticks out in my mind is the whiskey jack. I think many people had it eat right out of their hands. It was great. I couldn't believe it. A bird would just come, land on your arm and eat from your hand. I'm sure I'll always remember it. I just can't imagine forgetting it. (U.P.)

Two other students commented, with tones of wonder, on their discovery about the powers of classmates. D.C. was not speaking so much about his own physical limitations in hiking and cycling as about his perception that others in the class would be incapable.

> [I was] sort of shocked, actually, when we did our backpacking or biking [training]. If you were ever to say to me, "We're going to walk 20 kms. with 30 pound packs, and you're gonna bike 75 k or so," I really would never, ever, ever believed we could do it. (D.C.)

> I've learned that everyone is a poet. (S.L.)

B.N. combines her aesthetic response to the bush with the dirty pragmatics of water purification. She saw beyond the superficial loveliness to a deeper identification with the degraded state of the land.

> ...[You] get a real appreciation for space and for the outdoors. It makes you really think because being in Temagami, it's so beautiful and everything. But then, here we are purifying water and that kind of [thing]. It's like a mask; that beauty is like a mask. We still have to purify water ever since the beginning of that land deteriorating...we'll have to do that. It's just a first step, the water is gone and that may lead to other things. (B.N.)

Student U.P. made a statement that directly illustrated the powerful influence of the sense of wonder on reinforcing and adding a new personal dimension to his reading for the English requirements of the program.

> One night there, a few of us were just lying by the lake and we heard some wolves. That was a really neat experience for me, 'cause in my two book reports I read books about wolves. And right from the first one, [I was] really intrigued by them, really interested in them. And then to be able to go out and actually hear them.... It's a haunting sound. (U.P.)

Discussion

The inescapable consequences found in outdoor travel situations particularly enhance five of the previously outlined integrating factors: experience, whole process, authenticity, responsibility, and community. Inescapable consequences ensure that experiences have an edge they would lack if the outcomes of the experiences could be evaded. The world of the school is too small to be able to follow the complete process in any enterprise. But when the necessary indoor and outdoor steps are strung together, there is continuity of linked processes and integration is improved. It is the inescapable consequences of the outdoor elements that bring authenticity to the program. The real world, as students see it, is much less forgiving than the school world. And, of course, responsibility is enhanced when one must live with the results of one's actions or inactions. The students' statements are rich in references to their sense of community. They attribute that community to the absolute need to respect and use each other's talents engendered by the implacable demands of backcountry outdoor activities.

Students recognized their own personal growth in relation to four integrating factors: experience, responsibility, challenge, and community. Personal growth makes experience have personal meaning, as distinct from academic or impersonal meaning. Outdoor education provides the most pointed demands for responsibility, and students know when they rise to that demand. The challenge of apparently impossible outdoor events enables students to probe their perception of limits, both for themselves and others, which includes the artificial limits of subject-specific learning. Personal growth also promotes the sense of community: as individuals change in response to similar stimuli, they grow together in awareness and mutual respect, while maintaining their individual paths.

The sense of wonder especially enhances the integrating factors of experience, whole process, authenticity, challenge, and community. The sense of wonder brings emotional validation to processes that are otherwise mostly intellectual. Experiences are put into a context that includes intellectual, emotional, spiritual, and social elements. Students marvel at the cumulative, creative effect of linked steps in complete processes. Apparently insurmountable challenges, experienced in the outdoor components of the program are, when accomplished, manifest in expressions of wonder. A particularly clear example of the integrative effect of wonder on authenticity is found in the statement of U.P. on hearing wolves howl (above). U.P's reading of books on wolves was interesting enough, but the thrill of hearing wild wolves made it real. Students who marvel together, who share the experience of hand-feeding a wild bird, for example, grow in community.

Learning through direct experience is the quintessential factor that integrates curriculum elements. Direct experience is present to the highest degree possible in outdoor education. On this count, therefore, the outdoor curriculum stimulated integration of the whole. A major component of the integrated package was a cultural journalism project. I have not counted this as outdoor education, yet critical parts of it were done outside the school. Most students responded to the direct experience of interviewing local elders, transcribing, editing and producing a magazine in the same ways as they did to the more usual outdoor education elements. The thoughtful and emotional responses of students to these direct experiences were the key to their integrative effects.

The stimulation and examples spread from the outdoor to the indoor work. Raffan (1993) suggests that outdoor education provides personal meaning, as distinct from the public meaning of propositional knowledge taught in schools. Personal meaning is made by students as they respond to both school problems and outdoor living problems with inescapable consequences, personal growth, and a sense of wonder.

Brookes (1993) argues that outdoor education can only be defended if it can be shown to contribute to the social good in deeply unique ways. His proposition is that deep outdoor education must enable students to experience life in some kind of alternative world view. The requirements he gives as

examples are providing an alternative to our customary emphasis on time, alternative ways of understanding school life, and new ecologies of ideas. It is not clear that the outdoor education studied here would fully meet Brookes' requirements, but learning to see things holistically certainly provides a distinct alternative to the customary fragmented views of school learning. The freedom from the school timetable in the program studied provided a marked shift from the customary emphasis on time. The use of time to flow with natural cycles in outdoor events and to be responsive to the demands of tasks rather than the demand of clocks enhance conditions such as personal growth and wonder, neither of which happens on schedule. There is no basis in the data to claim that students experienced anything that could be construed as a new ecology of ideas, and, in this respect, the program does not meet Brookes's criteria. If integrated learning is a desirable goal, then sustained outdoor education provides a unique and critical dimension in enhancing integration.

It is not easy for schools to provide the kind of repeated, long-term, outdoor education found in this case. There are four possible barriers: the administrative difficulty of finding adequate blocks of time; the dominance of assessment for grades in most school systems; budget constraints; and lack of teachers competent in both school subjects and outdoor leadership. Long periods of time for outdoor education were found, in this case, by assigning the students' entire course load to one teacher and requiring that teacher to have no other courses to teach. This administrative maneuver is available in any school but is viewed as unusual. Budget constraints need not be a problem where there is parental support for the program (such as providing transportation) and where fund-raising by students is part of the program. Imaginative planning can provide effective programs within available funds. Teacher education can be a problem, depending on the jurisdiction. Wherever teacher education programs combine licensing for schools with outdoor teaching qualifications, there are plenty of competent teachers. But where these training functions are separated, capable personnel may be hard to find. The necessity of training outdoor leaders as teachers and school teachers as outdoor leaders are obvious if programs like this one are to flourish.

The difficulty of conducting customary evaluations of student work within the structure of an integrated program like the one described is not so easily addressed. It is a truism that the evaluation tail wags the curriculum dog. In any jurisdiction where grades are the only outcome of education that counts, it is nearly impossible to spend significant time in outdoor education. It is not possible to go into this difficulty here, except to identify it as a serious and endemic conflict that cries out for study and resolution. The integrated curriculum project studied in this research, and a few others like it, shows that it is not impossible to live with the dilemma.

The description in this paper springs from a single school's program and the work of a single teacher. There is no guarantee that any other school or teacher would achieve similar results. Yet the results show what is possible. Anzai and Simon (1979), when arguing for the usefulness of a single case, wrote, "One swallow does not make a summer, but it does prove the existence of swallows" (p. 140). They went on to add that careful study of even one swallow will yield much valuable information. There are other integrated curriculum projects with very similar attributes. It is enough that this investigation demonstrates the powerful influence that outdoor education has on curriculum integration and suggests directions and impetus for further work.

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