

An emerging international movement is concerned with the design and culture of school grounds with a view to improving the quality of children's school ground experiences. This movement focuses primarily on the concept of school ground "greening" whereby students, parents, teachers, neighborhood residents, and school and city officials work to upgrade the physical environment and to re-establish the natural habitats that existed prior to asphalt. Many school grounds around the world are now thoughtfully designed spaces that include a variety of natural elements including trees, butterfly gardens, ponds, and vegetable patches. Various terms have been used to describe these changes, including "school ground gardening," "school ground naturalization," "school ground restoration," and "school ground greening." While there are important differences between these terms, and while each term is itself somewhat contested, for the purpose of this paper, "school ground greening" will describe collaborative efforts to improve school grounds. a more detailed explanation of the terminological differences, see Houghton 2003).

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After a school ground is greened, it appears that numerous benefits emerge for students, teachers, the surrounding community and the environment. For example, recent research indicates that students attending schools with green school grounds appear to benefit from increased play opportunities (Malone and Tranter 2003; Moore 1996), safer and less hostile outdoor environments (Cheskey 1994), increased learning opportunities (Centre for Ecoliteracy 1999), increased connections to the natural environment (Bell 2000; 2001; Nabhan and Trimble 1994) as well as improved academic performance (Lieberman and Hoody 1998; Simone 2002). Teachers working at schools that have been greened report unique opportunities for curriculum development (Moore and Wong 1997), and reduced classroom management problems (Lieberman and Hoody 1998).

Although much of this research points to the benefits after a school ground has been greened, some research has also explored the benefits that emerge for young people during the process of greening (R. Hart 1997; Hunter, Layzell, and Rogers 1998; Kenny 1996; Moore and Wong 1997; Titman 1994). The study of student participation extends, of course, beyond school ground greening initiatives; other researchers have examined this issue in the context of community development, health education, sustainable development, as well as other environmental education initiatives (e.g., Breiting 2000; Chawla 2002b; P. Hart 2000; Jensen and Schnack 1997; Simovska 2000).

Researchers have developed many terms to discuss the importance of meaningful youth participation in these initiatives (e.g., "action competence" (Jensen and Schnack 1997); "genuine participation" (Simovska 2000); "environmental praxis" (Fawcett, Bell, and Russell 2002), "participatory democracy" (Wals and Jickling 2000)), as well as frameworks for conceptualizing youth involvement (e.g., "Ladder of Participation" (R. Hart 1992; 1997)). While these researchers differ somewhat in their interpretations and uptake of the notion of participation, they generally agree that a critical component of school ground greening (and other initiatives) is to ensure that young people's voices and concerns are considered during the greening process. They problematize and resist "token" approaches to involving students in greening initiatives, such as including them only in tree planting events. Some

researchers place particular emphasis on the notion that students should be involved in the problem identification phase of greening projects (e.g., R. Hart 1997). Many argue that young people have a right to participate in decisions that relate to their quality of life and contend that students, when given the opportunity, will be able to critically evaluate their spaces, identify alternatives, and evaluate the outcomes. All these researchers agree that an important- if not the most important- outcome of school ground greening is allowing young people to acquire skills related to democracy, participation, and citizenship during the process of greening. And finally, they assert that young people will carry these skills into adulthood, allowing them to become political, engaged, and reflexive adults who know their rights and responsibilities as members of a community. ⁴

In looking for additional support for child and youth participation, many point to international documents that recognize and support the notion that young people can and should be involved in decisions related to civic life. For example, the 1989 United Nations Convention of the Rights of the Child (CRC) is a set of universal standards for the protection and development of children (UNICEF 1990). The CRC contains a series of "participation articles" which articulate that young people are independent, thinking individuals who are capable of being involved in decisions that affect them (e.g., see Articles 12-15, 17). ⁵ Other international conferences have built on the foundations laid in the CRC and have sought to clarify and strengthen the nature of children's participation (e.g., Agenda 21, Local Agenda 21) (UNCED 1992; WCED 1993).

Much of the research that examines (and subsequently advocates for) authentic student involvement in environmental education initiatives has been conducted in individual schools, using a variety of research techniques (e.g., case study, ethnography, narrative, action research) that allow for in-depth understanding of the nature of student involvement in a specific project, at a specific school. Yet, to date, very little is understood about student involvement in greening projects across a large number of schools. How, exactly, are students involved in the process of greening school grounds within a school board district? What is the scope of their participation at a district level? Is student participation authentic (see Hart 1992; 1997)? Is the focus primarily on making the school ground "green," or is there a focus on acknowledging the importance of problem solving, critical thinking, planning, empowerment, and democracy? What role, if any, could/should a school board assume in creating a culture that endorses authentic student participation in educational initiatives, such as school ground greening projects? The purpose of this paper is to present the findings of a research project that investigated the nature of school ground greening at a number of schools within the district of a school board.

Methods

The study sites were selected from an urban school board district in southern Ontario, Canada, which has 451 elementary schools and 102 high schools. The district is located in Canada's largest city and its students are ethnically and socio-economically diverse. This school district was selected because of its many schools

with greening initiatives (approximately 20 percent) at various stages of their greening process. I used two research tools: questionnaires and interviews.

Questionnaires (Phase 1)

A research package containing four questionnaires was distributed to each principal at 100 district schools with green school grounds.⁶ In addition to completing their own questionnaire, principals were asked to distribute the remaining questionnaires to three additional respondents: 1) an involved teacher with a leadership role in greening or maintaining the school ground, 2) a teacher not involved in the process of greening the school ground, as well as 3) a parent involved in the greening project. I provided descriptive criteria to assist the principals in their selection of these additional respondents.⁷ Thus a total of 400 questionnaires were distributed (four questionnaires at 100 schools).

The questionnaire asked respondents to reflect on the greening process at their schools. They were asked to indicate the original motivators, levels of involvement of various individuals throughout the greening process, as well as who donated the most volunteer time.

I collected standard demographic information such as gender and age, as well as ascertained levels of interest and involvement in school ground greening initiatives. All questionnaires were numerically coded to ensure confidentiality.

Case Study Interviews (Phase 2)

To develop a greater understanding of if and how students were involved in the greening projects at the schools, I carried out follow-up case studies at five elementary schools. These schools were randomly selected from the returned packages of questionnaires to include one school from each "category" of socio-economic statuses (i.e., very high, high, medium, low, very low).

Individual interviews were conducted with three of the individuals who completed the questionnaires: the involved teacher, the principal, and the parent. In the few instances that the original respondent was unable to participate in the follow-up interview, I sought input from another individual. During the interview process, I was also directed to other parents, teachers, and administrators (beyond those who had completed the questionnaires) who had played key roles in the greening initiative and who could offer additional insights on student participation. Thus the final number of interviewees was 21.

Interviews were not conducted with the uninvolved teacher because I was primarily interested in learning about the experiences and stories of individuals that had greater knowledge about the greening process. Whereas the questionnaires were designed for individuals with a range of involvement with the greening project, the follow-up case studies targeted those who had more experience with the projects.

The semi-structured interviews, consisting of open and closed questions, were taped and lasted between 30 and 60 minutes depending on how much information

the participant had to offer. They took place at the school, in the respondent's home, or over the telephone.

Data Analysis

The questionnaire responses were analyzed using SPSS. Descriptive statistics were generated to understand respondent demographics and their perceptions of student involvement in the greening process.

Data from the interviews were fully transcribed. I read through the transcriptions to identify potential themes and topics that were relevant to the research questions. I used ATLAS.ti 4.1 (Visual Qualitative Data Analysis, Management and Theory Building) to code the interview transcriptions and develop conceptual themes to understand how teachers, administrators, and parents perceived student involvement.

Limitations of My Inquiry

I recognize the limitations of exploring student participation through questionnaires and interviews with adults and I am aware that there is "no other way to understand the significance of children's participation other than total immersion for extended periods with teachers and their students in their worlds" (P. Hart 2000, p. 17). Although I did not assume such an approach, I do believe that this study does shed insight into student participation in the school district profiled. Future studies, using a range of existing and emerging research approaches (e.g., phenomenology and narratives), are clearly warranted to explore students' own perceptions of their involvement in greening initiatives.

Response Rates and Demographics

Questionnaire Response Rates, School and Respondent Profiles (Phase 1)
Out of the 100 schools invited to participate, 45 returned at least one questionnaire (45 percent response rate at the school level) (Table 1). Approximately half of these schools returned all four questionnaires; whereas 32 percent, 11 percent, and 7 percent returned three, two and one questionnaire(s), respectively. At the individual level, 149 out of a possible 400 questionnaires were returned (37 percent response rate at the individual level). Forty-one principals, 39 involved teachers, 36 uninvolved teachers, and 33 parents completed questionnaires. A majority of respondents were women (83 percent).

A majority of the participating schools were elementary (kindergarten to grade 6) (n=31), as well several middle schools (grade 6-8, n=6) and high schools (grade 9-12, n=7). The schools represented a range of socio-economic statuses (Table 2).

Respondents ranked both their level of interest and involvement in their school's greening initiative on a four point Likert scale (1=not at all, 2=not very, 3=fairly, and 4=very). A large majority of respondents were fairly or very interested in school ground greening initiatives (93 percent). Levels of involvement were more

Table 1. Profile of Questionnaire Respondents (Phase 1)

Characteristic and Variable	Frequency	%
Role		
Principal	41	27.5
Involved teacher	39	26.5
Uninvolved teacher	36	24.2
Parent	33	22.1
Gender		
Male	26	17.4
Female	123	82.6
Age		
20-29	7	4.6
30-39	40	26.8
40-49	56	37.6
50-65	46	30.9
Highest level of education completed		
College diploma	23	15.4
Undergraduate	73	49.0
Masters	36	24.2
Doctorate	2	1.3
Other	15	10.1
Years working in public/private education system^a		
0-2	4	3.4
3-5	8	6.9
6-10	12	10.3
11-20	36	31.0
More than 20	56	48.3
Number of years involved with school ground greening projects		
0	31	20.8
1-2	20	13.4
3-5	54	36.2
6-10	32	21.5
11-20	11	7.4
More than 20	1	0.7
Level of involvement with school ground greening projects		
Not at all involved	24	16.1
Not very involved	27	18.1
Fairly involved	39	26.2
Very involved	59	39.6
Level of interest with school ground greening projects		
Not at all interested	3	2.0
Not very interested	9	6.0
Fairly interested	49	32.9
Very interested	88	59.1

Note. N= 149 respondents.

^a Responses from administrators, involved teachers and uninvolved teachers only (n=116).

Table 2. Profile of Schools (Phase 1)

Characteristic and Variable	Frequency	%
Level of school		
Elementary (Kindergarten to Grade 5/6)	32	71.1
Middle (Grade 5/6 – Grade 8)	6	13.3
Secondary (Grade 9 – Grade 12)	7	15.6
Socio-economic status of school catchment area ^a		
Very high	9	20.0
High	11	24.4
Medium	8	17.8
Low	9	20.0
Very low	8	17.8
Length of school ground greening project (years) ^b		
< 2	6	13.3
3-5	14	31.1
6-10	14	31.1
> 11	6	13.3
Unknown	5	11.1
Number of students		
< 200	1	2.2
201-500	26	57.8
501-1000	11	24.4
> 1000	7	15.6
Number of staff		
< 20	11	24.4
21-40	20	44.4
41-60	7	15.6
> 60	7	15.6

Note: N=45 schools.

^a The socio-economic status of each school was provided by the school board. It was determined by evaluating school communities as a function of: 1) average and median income of families with school-aged children; 2) parental education; 3) proportion of lone-parent families; 4) recent immigration; 5) housing type (apartment, single detached house); and 6) student mobility.

^b Data for this response were sought from the involved teacher. If the involved teacher did not respond, data were used from the parent questionnaire. If neither respondent indicated a response, "unknown" was recorded.

varied: 66 percent of respondents indicated that they were fairly or very involved, while the remaining 34 percent were not at all or not very involved. Table 1 and Table 2 present additional information.

Follow-up Case Study School and Interviewee Profiles (Phase 2)

The five elementary schools⁸ (grades K – 6) selected for case studies represent a range of socio-economic statuses, from very low to very high (Table 3). The schools also ranged in terms of the size of their student body (280 – 950 students) as well as their staff team (13-48 staff members).

Table 3. Profile of Case Study Schools (Phase 2)

	Socio-economic Status	Number of Students	Number of Staff (Teachers and Administrators)
School A	Very high	540	27
School B	High	691	35
School C	Medium	420	25
School D	Low	280	13
School E	Very low	950	48

I interviewed a total of 21 individuals during Phase 2: four principals, seven teachers, and ten parents. A large majority of these respondents were women (81 percent). The teachers and principals had been in the educational system for between eight years and 34 years, and had been working at their current schools between two and 15 years. The interviewees had been involved in greening projects for varied amounts of time, from one year to 12 years.

Results from Questionnaires

To understand student involvement in the various phases of school ground greening, the questionnaire asked respondents to indicate the original motivators, levels of involvement of various individuals throughout the greening process, as well as who donated the most volunteer time. The next section presents the results.

Who Provided the Initial Motivation?

Respondents indicated who had provided the initial motivation to start the process of greening at their school, and identified an array of individuals. (Table 4). Students were rarely reported as providing the initial motivation (1.4 percent). The most commonly reported initiators were teachers (41.8 percent), followed by parents (22.6 percent) and principals (18.5 percent). A small percentage of respondents indicated that the parent teacher committee (8 percent), community members (2 percent), or school board staff (2 percent) had provided the initial motivation. Also, a small percentage of respondents (3 percent) reported that “other” individuals (not listed on the questionnaire) had provided the initial

motivation for the greening project. These included a local community restoration group (e.g., Friends of X Watershed), a graduate student, as well as the director of a daycare centre that works in the school.

Table 4. Individuals that Provided Initial Motivation for School Ground Greening Project

Individuals/Groups	%
Teachers	41.8
Individual parents	22.6
Principal	18.5
Parent teacher committee	8.2
Other	3.4
Community members	2.0
School board staff or trustees	2.0
Students	1.4

Note: N = 146 respondents

Who Was Involved during the Initial Phase and On-Going Maintenance of the Project?

All respondents except the uninvolved teachers were asked to rank the involvement of a variety of individuals in the initial and on-going phases of school ground greening projects on a 4-point Likert scale (1 = not at all involved, 4 = very involved) (see Table 4 for a list of possible individuals/groups). For the purposes of this question, examples were provided to illustrate “initial phases” (e.g., problem identification, visioning, designing, fundraising, initial planting) and “on-going maintenance” (e.g., weeding, watering in summer, harvesting).

Respondents indicated that all types of individuals, except school board staff and trustees, were involved, to some degree, in the initial phases of greening projects. The types of individuals receiving the highest ranking for involvement included principals (M= 3.39), teachers (M= 3.37), students (M= 3.27) as well as parents (M= 3.20). School board staff/trustees appear to be less involved in the initial phases of greening projects (M= 1.98).

Respondents were also asked to rank the involvement of these types of individuals in on-going maintenance. They indicated that students (M= 3.04), teachers (M= 2.96), parents (M= 2.75), principals (M= 2.72) and custodial staff (M= 2.62) were the most involved. Several types of individuals were reported as being not involved in the on-going projects, including school board ground maintenance staff

(M= 1.99), community members (M= 1.93), as well as school board staff/trustees (M= 1.39) (Table 5).

Table 5. Mean Level of Involvement of Individuals during Initial and On-Going Maintenance Phases of School Ground Greening Initiatives

Types of Stakeholders	N	Initial		On-Going	
		M	SD	M	SD
Students	97	3.27	0.822	3.04	0.910
Teachers	98	3.37	0.831	2.96	0.924
Individual parents	96	3.20	1.094	2.75	1.217
Parent teacher committee	97	2.84	1.098	2.25	1.058
Community members	97	2.48	1.034	1.93	0.992
Principals	97	3.39	0.755	2.72	1.067
Custodial staff	97	2.87	0.896	2.62	0.973
School board ground maintenance staff	95	2.67	1.006	1.99	0.965
Other school board staff or trustees	83	1.98	1.023	1.39	0.682

Note: Level of involvement was based on a 4-point scale (1 = not at all involved, 2 = not very involved, 3 = somewhat involved, 4 = very involved).

Who Donated the Most Volunteer Time?

Involved teachers and parents were asked about the three types of stakeholders that had donated the most volunteer time throughout the entire greening project. They indicated that three types of stakeholders had donated the most volunteer time: teachers (25.8 percent of responses), students (22.3 percent), and individual parents (21.8 percent). School board staff/trustees (1.5 percent), school board ground maintenance staff (1.5 percent), community members (3.9 percent), as well as the parent teacher committee (4.4 percent) donated the least amount of time (Table 6).

Table 6. Volunteer Time Donated by Individuals/Groups

Individuals	% of responses
Teachers	25.8
Students	22.3
Individual parents	21.8
Principal	12.2
Custodial staff	6.4
Parent teacher committee	4.4
Community members	3.9
School board ground maintenance staff	1.5
Other school board staff or trustees	1.5

Results from Follow-Up Case Studies

The follow-up case study interviews at the five schools provided a much more rich, textured, and complex “story” of how students were involved in the process of school ground greening.

Questionnaire respondents had indicated that students were assuming important roles in selected aspects of the greening initiatives. They reported that while students were almost never responsible for providing the initial motivation for the greening projects (Table 4), they were quite involved in the initial and on-going phases of the project (Table 5) and they did provide a large amount of volunteer time (Table 6). Case study interviewees supported aspects of these findings, but I also found some discrepancies between the two data sets. They reported that students’ involvement at their schools varied in the different stages of school ground greening: problem identification, visioning and design, fundraising, planting, and maintenance. I will use these stages as a framework for discussing student involvement.

At all five case study schools, interviewees indicated that students were not involved in the problem identification phase of greening and claimed that this was done by adults (e.g., teachers, parents, principals). This finding is consistent with the questionnaire responses which indicated that students were almost never involved in providing the initial motivation for the project (Table 4). When I probed interviewees as to why the students were not involved in this phase, many reasons were offered. Several respondents suggested that the students were too young to realize that “things could be different” (Parent, School A). Another parent contended that “at that age, you just accept what you have...you never question things” (Parent, School B). One principal who was concerned about time and

curriculum demands indicated “it would take too long to get them to do that” (Principal, School D). Time pressures, in terms of funding application deadlines, also seemed to limit student involvement in the early phases. An involved teacher indicated that her students were not involved in the early phases of the process of greening because “we found out about a proposal at the beginning of February and we had to have it in by February nineteenth. So we just rushed through the visioning process...I thought that we’d just apply for this, we’ll ask for this and this and go from there...get the students involved once we have more money” (Teacher, School C).

At all of the schools, students were involved in contributing design ideas. Schools used various techniques for gathering student ideas. At one school, students were asked to complete questionnaires with their parents. At another school, student representatives who had been elected to a Student Council sought design ideas from their own classes and worked as a Council to generate a vision for a new school ground. At three of the schools, students were asked to create maps and drawings of their ideal school ground. It appears that student ideas were thus sought out and seriously considered during the design phase of the projects. Again, this finding is consistent with the questionnaire data (Table 5). Once the design ideas were solicited, however, adult committees always made the final design decisions and no students were involved.

Adults did most of the fundraising and planning for the projects in the case studies. Many of the interviewees shared the following principal’s perspective on children’s interest and ability to be involved in such activities: “they are young children and they don’t really care to know about a lot that goes into writing grants, organization or ideas...that for them might be a little boring...” (Principal, School B). One involved parent, with very little experience in organizing such an initiative, also indicated that when “adults are in over their heads” with fundraising and planning, “it is difficult to know how to include students” (Parent, School C). A notable exception is the grade 5 class at School A that was actively involved in raising funds through a partnership program with a financial institution’s “Business Entrepreneur Program.” This class made presentations about the greening project to approximately 25 corporations in the city, raising \$30,000.

Students were involved in the actual planting at all five of the case study schools. At some schools, this involved the entire student body over a very short period. A parent from School A reminisced: “The students planted all the trees throughout the week...they went out and took each class at a time and picked the tree that they wanted and planted them and then watered them for the rest of the year.” At other schools, the planting involved small groups of students over a longer period. Despite the reported active student involvement in planting, it appears as though sometimes student involvement in the planting was actually quite regulated and overshadowed by adults’ interests. A parent recalled “Sometimes, I get particularly bad tempered with all these children around, because they won’t do what I wanted them to do” (Parent, School B). Another teacher recalled her frustrations in having the students involved in the plantings: “I’ve gone back on the weekends a few

times, and moved their plants around...I just didn't have the heart to tell them at the time, but I really couldn't just leave them that way" (Teacher, School C).

It appears that students are involved to varying degrees in maintenance. At two of the schools, they can join clubs to help maintain the garden (e.g., Garden Club, Environmental Club). At two different schools, this responsibility is assumed by adults (e.g., teachers/ parents/ principal). At these schools, students can help the adults, but there is no formal club. At one of the schools, a principal expressed concern that the maintenance of the garden could get in the way of formal teaching that should be done in the school, noting that "There's too much for children to weed. There is just the time that... if one were to devote the time in the curriculum to doing what needs to be done, it's a saw-off from other things that are needed to be done" (Principal, School C). This is slightly different than the information gathered through the questionnaire that indicates that students were quite involved in the maintenance (Table 5).

In reflecting on student involvement in the greening initiatives, some interviewees noted that students who were involved in the greening project took tremendous ownership over their work. The principal from School B stressed the importance of including her students in the process of greening:

We're continually involving the students; it's part of our culture. And we ask the kids for their opinion, we ask for their ideas, then they bring them back to the class council meeting and they discuss them, and come up with a proposal or their preferences. And we try to act on that as much as we can, because it's only with ownership that they'll take responsibility.

In addition to gaining ownership for and empowerment from the projects, some interviewees also noted that when students are involved in the greening project that they learn about the power of collective action. The principal from School E suggested that:

It shows them that when they put their minds together and lean shoulder to shoulder into the task, that they can accomplish just about anything... that they can take something that looks like a wasteland and turn it into something that's not just something aesthetically attractive but something that actually has a purpose and return it to a useful state.

Effect of Independent Variables

Having explored and discussed perceptions of student involvement, I next examined if and how the perceptions of student involvement differed as a function of respondent and school characteristics. For example, were the perceptions of involved teachers different than perceptions of uninvolved teachers, administrators and principals? Did men and women perceive student participation differently? Did questionnaire respondents from schools with different socio-economic status report different perceptions of student involvement?

I considered the following independent factors related to the school: socio-economic status of the school community; length of school ground greening project; age level of school; number of staff; and number of students. I also examined if characteristics of the questionnaire respondents, such as role, gender, age, level of education, years teaching, area of education, as well as levels of involvement and interest influenced the perceptions of student involvement.

My analyses of the questionnaire responses revealed no statistical differences in perceptions of student involvement as a function of any independent variables related to either the school (e.g., grade level, socio-economic status) or the respondents (e.g., role, gender, age). The analyses of my follow-up case studies confirmed that the pattern of student participation was consistent across schools with widely ranging socio-economic statuses, numbers of students, numbers of teachers, etc.

Reflections and Recommendations

The findings reported here suggest that while students in this school district provide considerable time and labor, they are not very involved in the problem identification, visioning, or planning phases of greening. I would thus argue, as others have, that much room exists for students to become more involved in earlier phases of the greening projects. While it is laudable and important to include them in the design, actual planting and maintenance, much is being lost when they are not involved in earlier phases, particularly the problem identification phase (R. Hart 1997).

R. Hart's "Ladder of Participation" (1997) describes eight "rungs" or levels of participation. The present study found a range of such levels. At some schools, for example, there were elements of "Manipulation or Deception" (Rung #1) whereby, as R. Hart (1997) describes, "an adult designs a garden, has children carry out simple planting, and then tells journalists and photographers that the children designed and built the garden" (p. 40). At other schools, I found elements of "Tokenism" (Rung #3), whereby adults are interested in giving children a voice, but have not "begun to think carefully and self-critically about doing so" (R. Hart 1997, p. 41). The highest level of participation perceived in the five case study schools was "Consulted and Informed" (Rung #5), whereby students understood the nature of the project, their opinions were seriously considered, and they were kept abreast of developments.

Higher "rungs" of participation on R. Hart's ladder yet to be achieved include "Adult Initiated, Shared Decisions with Children" (#6), "Child-Initiated and Child-Directed" (#7), and "Child-Initiated, Shared Decisions with Adults" (#8). The work of R. Hart (1997), Hunter et al. (1998), Moore and Wong (1997), as well as Titman (1994), provides compelling evidence that increased student involvement in all aspects of a greening initiative will generate further benefits for the students, the school community, as well as the greening project.

Student participation in greening initiatives in this school board can also be analyzed and explored by using other frameworks. For example, based on Jensen and Schnack's (1997) action competence work, Jensen (2000) has developed a

matrix of participation that is slightly more sophisticated than the Ladder framework, in that it highlights how the level of student participation may vary at different stages of a project. It is also a helpful tool for discussion and evaluation that makes many implicit assumptions about participation more visible. Jensen acknowledges, for example, that it may not be appropriate or possible for students to be involved in some phases of initiative s, while in other phases, they may be the primary drivers and decision makers. When the student involvement reported in this study is analyzed in light of Jensen’s matrix, once again, it becomes clear that students in this school board are not involved nearly as much as they could or should be (Table 7).

Table 7. Student Participation in Various Phases of Greening Initiatives (adapted from Jensen, 2000, forthcoming)

	Involved or Not	Problem Identification	Visioning and Designing	Fundraising	Planting	Maintenance
Students suggest / Common decisions						
Students suggest / Students decide						
Teacher suggests / Common decisions			X		X	X
Teacher informs / Students accept or reject	X			X	X	X
Teacher decides / No student influence		X				

Note: Some of the phases of greening contain more than one “X” to reflect the range of responses across the schools profiled.

There are many reasons why students are not involved in more authentic ways in the greening projects profiled in this study. Chawla (2002a) summarized some of the challenges: time constraints; a poor understanding of child's capabilities; a belief that adults can adequately represent the perspectives of children; a belief that children are unskilled and unreliable; a lack of understanding as to how to facilitate participation; and a fear of politicizing children. It appears that many of these barriers were present for the participants in the present research.

Additionally, the culture of schooling itself affects children's participation. Weston (1996), discussing the potential implications of the deschooling movement for environmental education, notes how schools have little room for anything beyond pre-ordained, teacher-directed activities (see also Hargreaves 2003). As Robottom and Sauvé (2003) assert, a common problem for participatory approaches (and environmental education generally) is the instrumentalist framework of schooling: how does one foster greater participation within the context of the status quo of technocratic rationality? Lousley's (1999) study of environment clubs in the Toronto District School Board demonstrated this well. Schools were wary of controversy, and teachers and administrators in her study desired to "depoliticize" the activities of any of clubs which dared stray too far from banal efforts such as recycling paper in the school. (See also Whitehouse (2001) for a description of the ways in which a group of students, too, were wary of being seen as overly political).

While school ground greening, at first glance, hardly seems radical, its potential to disrupt anthropocentrism (Bell and Russell 1999) and to encourage greater participation of students suggests that, as with Lousley's environment clubs, there will likely be efforts to depoliticize the movement. Planting trees in a preordained location is one thing; students identifying for themselves their unhappiness with various aspects of schooling, such as being imprisoned indoors for long periods of time, is quite another. Feminist poststructuralism may offer interesting insights here (Barrett, forthcoming; McKenzie, in press).

Recommendations

It seems to me that given that all these schools are within the same school district, there is an important and unique role for upper-level administrators to help facilitate and honor student participation in the greening initiatives (and subsequently other educational initiatives). If the board were to fully endorse authentic student participation, it could help to create a culture within the district that honors meaningful child and youth involvement in a variety of educational initiatives, including school ground greening projects.

To that end, I offer a series of recommendations for school boards interested in facilitating increased student involvement across a large number of schools.

- x Develop curricular material within the school board that helps students to become involved throughout all phases of a greening project, with an emphasis on skills related to democracy, citizenship, and problem solving. Curriculum can also be age/grade specific, to recognize how children's participation can evolve over time;

- x Train individuals (e.g., teachers, parents, community members) to help facilitate student involvement. Numerous “how to books” detail how students can participate in the process of greening (e.g., Driskell 2002; Evergreen 2000; R. Hart 1997; Hunter et al. 1998; Kenny 1996; Moore and Wong 1997; Stine 1997);
- x Increase community involvement to solicit input and advice from a range of stakeholders (e.g., community members, local businesses, local government, etc.);
- x Increase the length of time set aside for the process of greening so that commonly cited barriers to student involvement, such as funding deadlines and season planting restrictions, can be foreseen, managed and planned for in advance;
- x Reframe the “culture” of school ground greening to honor the process of greening as much as the end product;
- x Create board-wide policies that elucidate the role of school ground greening within the school board and that honor and validate the important educational opportunities that emerge through meaningful student participation (see Evergreen 2000); and,
- x Institutionalize children’s participation within the school board by providing venues for young people to become involved in initiatives beyond school ground greening, such as curriculum development, budgeting, and visioning.

Conclusion

There is no “one right way” to include students in the process of greening a school ground, and the schools in the present study involved students in different ways. Further, perception of the level of student involvement varied not only among schools, but also within schools. It was not uncommon for questionnaire respondents from the same school to report different recollections of student involvement.

The stories of greening that I was able to piece together also varied between the questionnaires and the case studies. Questionnaire respondents answered several closed-answer questions about the involvement of various types of individuals. This type of question gave me insight into whether students were involved, when they were involved, and how they were involved, but offered only limited understanding. The case study interviews allowed me to ask complementary, more in-depth questions about student involvement. The stories I heard from the case study interviewees were not always consistent with the findings that had emerged from the questionnaires. Sometimes, my data sets even contradicted each other. For example, in analyzing the questionnaires, it appeared that students were very involved in many aspects of the greening process (Table 5, Table 6); yet when I probed about the type and quality of their involvement during the case study interviews, I found that student involvement at the five schools appeared to be actually quite limited (and even unauthentic and token at some of the schools), particularly in the early phases. Did questionnaire respondents paint an overly positive image of student involvement because of their commitment to “greening?” When I probed for more specifics about the involvement, I realized that much room

existed for students to be involved in a more meaningful participatory way. These contradictions between the questionnaires and the case studies certainly reinforced the importance of having a mixed methods approach to research.

In spite of these differences between schools and research tools, it does appear that students at all of the schools are involved, to varying degrees, in the process of greening. I have argued that their involvement could certainly be more authentic, political, and active, particularly at the early stages of greening.

Efforts must, I believe, be directed towards enhancing the role of students in school ground greening projects in this school district. I have argued that the school board could assume an important role in facilitating this involvement. Future research must continue to explore the factors that limit and enable student participation, examine the skills needed by educators who want to adopt participatory approaches, and appraise the roles that could be assumed by a school board in creating a district-wide culture that endorses truly authentic student involvement.

Endnotes

1. This paper was awarded an Honorable Mention in the 2003 CYE Graduate Student Paper Award for Excellence in Research.
2. I gratefully acknowledge support from the Social Science and Humanities Research Council of Canada and Evergreen.
3. I am not suggesting that these terms (i.e., school ground gardening, school ground naturalization, school ground restoration, school ground improvement, school ground greening) all mean the same thing. Nor am I suggesting that debate about their definitions is not worthy. Such debate is, however, not the main focus of this paper, which reports on student involvement during the process.
4. It is important to note that many researchers (including some of those listed above) have taken more critical approaches in exploring the issue of "participation." For example, some have argued that participation is such a widely used term that it has become a part of modern jargon, and its ambiguity has resulted in it being used in many sectors (e.g., development and education) without close and critical evaluation (see Cooke and Kothari 2001; Cornwall 2002; Rahnema 1992).
5. Interestingly, the CRC also contains an article closely related to the issue of school ground greening. Article 31 addresses children's right to play, rest, and leisure.
6. This list of schools was generated when the school board was preparing a document related to school ground greening, at which time all schools in the board were asked to indicate if they had a greening project.
7. I am aware that there are other possibilities of respondents who could have completed the questionnaires. I chose the selected four respondents to investigate a range of perceptions within and outside of the school. Of course, I could have sought perceptions of involved parents, or I could have explicitly delineated between involved and involved principals, but for the purposes of this study, and in the interest of project scale, I chose the selected respondents.
8. The names of all schools have been changed to protect anonymity.
9. For other recommendations on how to increase children's participation in a broader context, see Chawla 2002.

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