"There's Only So Much Money Hot Dog Sales Can Bring In":
The Intersection of Green School Grounds and Socio-economic Status

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Abstract

In the interest of enhancing children's environments, many school grounds around the world are being 'greened' as asphalt and manicured grass are replaced with a diversity of elements and spaces, such as trees, shrubs, gardens, art, gathering areas. Despite a growing body of research from a number of disciplines that is exploring the potential of these spaces, very little is known about how issues of socio-economic status (SES) influence school ground greening initiatives. In this paper, I explore what (if any) relationship exists between school ground greening and SES in a Canadian school board where approximately 20% of more than 500 schools have begun the greening process. A mixed methods approach was used: 1) 149 questionnaires were completed by administrators, teachers, and parents associated with 45 school ground greening initiatives; and, 2) 21 follow-up interviews were conducted with administrators, teachers and parents at 5 greening projects across a range of SES's. Three significant, and arguably troubling, patterns emerged as a function of socio-economic status of the school community. Participants associated with schools across a range of SES's had different: 1) perceptions as the importance/adequacy of green school grounds; 2) access to adult support; and 3) access to funding. The implications of these findings are discussed.

Keywords: green school grounds, socio-economic status, class, children's play spaces, environmental education

Introduction

> In total, we've spent about $2,200. I run Book Fairs here and half of the proceeds of every book fair goes towards the school ground. So that comes to about $1,000/year. So we're building up a little nest-egg. (Teacher, School E, Low Socio-economic School)

> I think we were able to raise $300,000 because we have a lot of generous and wealthy families. When we started fundraising for the green school ground project, I first of all went to my dentist, and he gave $1,000 bucks and that was great, we were thrilled, because it was one of the biggest donations we had. So then they went to my husband's company and he gave $1,500. And my father-in-law matched it. So then when the kids went to subsequent businesses they knew… we didn't get anything smaller than $500.00 out of those parents. (Parent, School A, High Socio-economic School)

In these opening quotes, a teacher and parent from communities in the extremes of the socio-economic spectrum are describing their school's efforts to fundraise for school ground greening projects. They are part of a growing global movement that focuses primarily on the concept of school ground 'greening'[1] whereby students, parents, teachers, neighbourhood residents, and school and city officials collaborate to improve the school ground spaces. Barren, hard, and unimaginative school grounds comprised primarily of tarmac and cultivated grass are being transformed to include a diversity of spaces and environments. Many school grounds around the world now have trees, ponds, shrubs, murals, farm animals, forts, hanging plants, and moveable structures.

When a school ground is greened, it appears that many benefits emerge for children (Dyment, 2005). Research indicates that students attending naturalized schools benefit from increased play opportunities (R. C. Moore, 1996; Tranter & Malone, 2004; Weinstein & Pinciotti, 1988), safer and less hostile outdoor environments (Cheskey, 2001; Titman, 1994), improved social relations (G. T. Moore, 1986; Stine, 1997), increased learning opportunities (Bell, 2001b; Centre for Ecoliteracy, 1999), increased connections to the natural environment (Bell, 2001a; Harvey, 1989; Hutchison, 1998; Malone & Tranter, 2003a, 2003b; Nabhan & Trimble, 1994) as well as improved academic performance (Lieberman & Hoody, 1998; Simone, 2002). Teachers working at schools that have been greened report unique opportunities for curriculum development (R. C. Moore & Wong, 1997) and reduced classroom management problems (Lieberman & Hoody, 1998).

Returning now to the opening quotes, imagine the *kinds* of outdoor spaces that are available for the young people attending each of these schools. What would be possible with $2,200? What would be possible with $300,000? Your imagination will probably not lead you too far astray from the realities of which I observed during my research project exploring green

school grounds. The possibilities for design on green school grounds depend on many factors, and an important one relates to issues of socio-economic status (SES).[2] As the above quotes infer, and as others have noted, "money draws money, and success breeds success" (Wyzga, 2001, p. 22).

Yet in the literature related to school ground greening, very little attention has been placed on exploring the influences (if any) of SES. While some researchers have noted the particular benefits of *community* gardening and greening initiatives in lower SES communities (Faber-Taylor, Wiley, Kuo, & Sullivan, 1998; Kuo, Bacaicoa, & Sullivan, 1998; Kuo & Sullivan, 2001; Kuo, Sullivan, Coley, & Brunson, 1998; Trust for Public Land, 1995), little is understood about the relationship between school ground greening and SES. Of course the consequences of different SES's manifest themselves in numerous ways beyond the most obvious issue of funding and extend into other aspects of greening projects such as access to adult assistance as well as perceptions of the importance of green school grounds.

Important questions about the intersection of school ground greening and SES thus remain unanswered. For example: What (if any) relationship exists between school ground greening and SES? And if a relationship exists, does it tend to favour already higher SES schools? Do communities with differing SES's value greening initiatives differently? Are certain school ground elements more or less valued depending on SES? Do higher SES schools have more elaborate, complex, and sustainable green school grounds? Are lower SES schools disadvantaged in terms of their access to social and economic capital to facilitate greening initiatives? The aim of this paper is to explore these questions.

Specifically, this paper draws on research conducted on 45 green school ground initiatives in Toronto, Canada, and it reports on a study concerned with the intersection of SES and green school grounds.[3] I begin by exploring if and how adults (e.g., administrators, teachers, and parents[4]), associated across schools with a range of SES's have different perceptions of school ground greening initiatives before turning to a more in depth exploration issues of social and economic capital.

Methods

The study sites were selected in an urban school board in southern Ontario, Canada, which includes 451 elementary/middle schools (Kindergarden to Grade 8) and 102 secondary schools (Grade 9-12). The school board is located in Canada's largest city and is diverse in terms of ethnic composition and SES of students attending these schools. The school board was

selected because of the large number of schools with greening initiatives (approximately 20% of schools in the board).   The projects were at various stages of their greening process.

<u>Procedures</u>

Questionnaires

A package of 4 questionnaires was distributed to principals at 100 schools with green school grounds in the school board.[5] In addition to completing their own questionnaire, each principal was asked to distribute the additional questionnaires to 2 teachers and 1 parent. The principals were provided with information to help them select the additional questionnaire respondents (e.g., description of role, type of involvement). Standard demographic information about the respondent (e.g., gender, age) and school community (e.g., number of students/staff, SES) was collected.

Respondents were provided with a list of 14 space types (Table I) and were asked to rank each space on two scales. First, they were asked to assess the *importance* of the spaces on an *ideal* or *exemplary* school ground using a 4 point Likert scale (1=not at all important, 2=not very important, 3=fairly important, 4=very important). Second, they were asked to evaluate the *adequacy* of the spaces on their *existing* school ground using a 4-point Likert scale (1=not at all adequate, 2=not very adequate, 3=fairly adequate, 4=very adequate).

Respondents were also asked to describe the involvement of a variety of stakeholders (e.g., teachers, parents, community members) during the initial and on-going phases of greening using a 4 point Likert Scale (1=not at all involved, 2=not very involved, 3=somewhat involved, 4=very involved).

INSERT Table I ABOUT HERE

Follow-up Case Studies

Follow-up case studies were done at five elementary schools that had completed the questionnaires. These schools were chosen from the returned packages of questionnaires to include one school randomly selected from each 'category' of SES (i.e., very high, high, medium, low, very low). Individual interviews were conducted with individuals who completed the questionnaires (teacher, principal, and parent)[6] as well as additional teachers and parents who could provide insight into the study themes but had not been selected to complete the questionnaires. I also visited the schools and had tours of the greening projects. During the

interview, I explored issues related to three themes: importance/adequacy of space types, access to adult support, and funding.

Data Analysis

The questionnaire responses were analyzed using SPSS, a commercially available statistics program. Descriptive statistics were generated to understand respondent demographics and perceptions of the importance and adequacy of the 14 space types. Independent samples t-tests examined the influence of SES.

Data from the interviews were fully transcribed. I read through the transcriptions with a view to identifying 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 relevant to the research questions.

Response Rates and Demographics

Questionnaires

Out of the 100 schools invited to participate, 45 returned at least one questionnaire (45% response rate at the school level). Forty-one principals, 39 involved teachers, 36 uninvolved teachers, and 33 parents completed questionnaires (additional demographics of questionnaire respondents found in Table II). The schools represented a range of SES's (additional demographics of schools found in Table III).

INSERT Table II and Table III ABOUT HERE

Follow-up Case Studies

The five elementary schools were located across a range of SES's, ranging from very low to very high. The schools ranged in terms of the size of their student body (280 – 950 students) as well as their staff team (13-48 staff).

I interviewed a total of 21 individuals (4 principals, 7 teachers, and 10 parents) associated with the 5 greening projects profiled in the case studies. A large majority of interview respondents were women (81%). The teachers and principals involved in the follow up case study had been involved in the educational system for a minimum of 8 years and a maximum of 34 years, and had been working at their current schools between 2 and 15 years.   The

interviewees had been involved in greening projects for a varied amount of time: one respondent had only been involved one year, while another had been involved for 12 years.

Results

My analysis of the questionnaires and interviews revealed a striking number of patterned differences emerging amongst schools and greening projects in different SES communities. Three of these will now be discussed.

<u>Importance and Adequacy of Spaces</u>

Analysis of the questionnaires revealed that study participants at different SES schools had different perceptions of the importance of space types on an exemplary green school ground and of the adequacy of space types of their own school ground (see Table I for a list of space types).

In terms of *importance*, when the entire sample was considered (across all SES categories), respondents ranked the majority of spaces as being 'fairly' or 'very important' on an *exemplary* school ground. The mean ranking for the 14 space types was 3.49 ($SD = 0.39$). Respondents indicated that the most important spaces were open green spaces (Space 1) ($M = 3.88$), hard surface play spaces (Space 2) ($M = 3.76$), as well as shaded spaces (Space 12) ($M = 3.89$). The space that received the lowest ranking in terms of importance was elements to support creative play (Space 5) ($M = 2.79$).

I then compared if and how respondents from extreme SES schools perceived the importance of the various space types.[7] Respondents associated with schools in the lower SES extreme ranked all spaces except one (Space 4) as being slightly more important than their counterparts (Table IV). While only one of these differences is significant (Space 14), it is a consistent and patterned trend: respondents from lower SES schools felt that the spaces were modestly more important than respondents from higher SES schools.

INSERT Table IV ABOUT HERE

I next considered the entire sample's perceptions of *adequacy* of spaces on their *own* school ground. The mean ranking for the 14 space types was 2.28 ($SD = 0.49$). The most adequately represented spaces were open green space (Space 1) ($M = 3.32$) as well as hard surface play spaces (Space 2) ($M = 3.17$). The four spaces that respondents indicated were the least adequate were as follows: a) elements that support creative play (Space 5) ($M = 1.32$); b)

areas sheltered from the rain and snow (Space 14) (M = 1.48); c) built elements to support learning (Space 6) (M = 1.73); as well as, d) areas sheltered from the wind (Space 13) (M = 1.87).

When I explored if and how the perceptions of adequacy of the space types was related to SES, distinct trends emerged. Respondents from higher SES schools reported higher means for adequacy for all but one (Space 2) of the spaces than their counterparts from lower SES schools (Table IV). In other words, the respondents from higher SES schools felt as though the elements on their school ground were more adequate than the respondents from lower SES schools. Six of these differences are significant (Table IV).

Unsurprisingly, during my site visits to conduct the interviews, I noticed that the projects were vastly different between schools with varying SES's. Consistently, higher SES schools had more ambitious, elaborate, and complex designs compared to lower SES schools, where designs were far more modest. Future plans were strikingly different as well, reflecting differential access to funds. To illustrate, whereas School A (very high SES) plans to have an outdoor amphitheatre with a stage for productions (at the time of the interview, the architect's quote was $200,000), School E (very low SES) has more immediate pressing concerns, that prohibit any extensive long-term planning. In the words of one teacher from School E: "We need to find a some source for bird seed as that seems to be one of our big costs right now and I'm hoping that we can find some contact that will be generous enough to give us some help in that regard."

Access to Adult Support

A central finding that emerged through both the questionnaires and interviews was the differing role that adults assumed at schools with varying SES's. Consistently, school ground greening committees at higher SES schools were comprised of active parents and community members; whereas at lower SES schools, teachers were the key players.

Parental Involvement

On the questionnaires, study participants from higher SES schools indicated that parents and community members were significantly more involved during the initial and on-going phases of greening than parents and community members from lower SES schools (Table V). All of these statistical differences are significant. This differential pattern of parental involvement as a function of SES persisted in the interviews.

INSERT Table V ABOUT HERE

8

At two of the high SES schools (School A and School B), parents were extremely involved and there was a general consensus that "You need a leadership person outside of the school administration to run this thing because they're [teachers and administrators] too busy" (Parent, School A). At School A, the initiative was driven almost entirely by one parent. While she does have a very active parent committee that supports her, she is very much the leader of the project. I asked her to describe her involvement:

> It is intense, a lot of work, almost on a daily basis I'm working for that garden, it seems. It seems that way because if you're not actually gardening you're doing things like this, like talking about the project or planning for the future or doing research… you hear about something on a radio show and that takes you to the internet or to look up things, searching out funders.

At School B, there was a very committed *group* of parents that worked together on the greening project (no single parent assumed the leadership role). Study participants indicated that someone from this group of parents gives time almost on a daily basis to the garden project. A parent described that "Not a day goes by when we're not thinking about the garden and dealing with the garden in some way." At this school, one of the parents, fondly known as Captain Compost, helps with the compost program every day on his way to work. He stops, turns the compost and often gives mini-lessons to the children in the winter.

At the schools with such active parent involvement, the dedication extends into summer ("We would be over there weeding all through the summer, and no children around, and whenever any of us had a minute we would go over there and weed" (Parent, School B)) and weekends ("I was actually driving by on Sunday and I saw both these dads out with their shovels in the rain and they were mulching" (Parent, School A)). Dedication even appeared to persist once the children of the parents graduate from the school.

> *Janet*: Will you stay involved when your last child moves on?
>
> *Parent, School A:* I probably will but I'm extremely unusual in lots of ways.
>
> *Janet*: Why will you stay involved?
>
> *Parent*: Because I'm in the community. I'll stay involved weeding what I've done and I'll stay involved making sure mulch gets there, making sure it gets spread out… trying to keep the areas that we were responsible for tidy. But I'm very unusual for that.

Study participants from these higher SES schools admitted to feeling pressure to impress the other parents. For example, when I asked one parent from School A why she had spent so

much time on a certain task, she replied that "I'd just done it because I don't want the parents to see it looking a shambles" and that "if I don't get that done the parents are going to shoot me."

At the opposite end of the SES spectrum, there is little to no parental involvement in the greening program at School E (very low SES). Many reasons were offered as to why parents were not involved. Some interviewees suspected that the cultural makeup of the student and community body contributed to low parental involvement. In a school where more than 73 countries are represented, it was postulated that language barriers might limit parental involvement. It was also thought that in many of the home countries of the students, it is common for parents to stay very removed from their child's education and only become involved if there is a problem. Furthermore, for many of these new Canadian families, "a lot of these parents are working 2 and 3 jobs… so it's very hard in this area to get parents to go above and beyond the call for extracurricular stuff. We don't put that pressure on them, we don't feel that's fair" (Teacher, School E).

Teacher Involvement

Teacher involvement also varied as a function of SES, with teachers being far more involved in greening projects in lower SES schools. While this pattern did not emerge as being statistically different on the questionnaires (see Table V), interviewees were adamant that such a relationship existed[8].

At schools A and School B ('very high' and 'high' SES, respectively), where parents are actively involved in greening projects, teacher involvement has been very limited. When I asked why so few teachers were involved, many agreed with the following principal who suggested that "I think that lots of teachers just take a step back because they can see there's so many other folks [parents] taking the lead" (School B). Additional reasons were offered to explain the lack of teacher involvement: some individuals suggested that teachers were overburdened with mandated curriculum and standardized testing; others proposed that early career teachers were overwhelmed with their new responsibilities and couldn't possibly take on any new initiatives; still others suggested that unrest in the work place (e.g., strikes, work-to-rule) has unsettled the teachers, making it difficult for them to get involved in extracurricular activities; while others speculated that school ground greening was another educational reform/fad

Study participants were adamant that a lack of teacher involvement did not necessarily imply a lack of teacher support; quite the contrary, many felt that even where teacher involvement was limited, there was still support for the initiative.

Janet: How many teachers are involved in the project?

Parent, School B: None.

Janet: Is that a problem or is that okay?

Parent: I think it is a problem…I think they're philosophically or emotionally supportive of it. For example… pretty much all the teachers come to the Fall Festival and the Spring Fair and they donate money sometimes.

Janet: They're supportive of it but they don't play a leadership role?

Parent: They don't really help, no. In fact, not one bit.

At schools where teachers were not involved but were supportive, interviewees acknowledged that it did take considerable time to acquire their support.   A parent at School A described how teacher support took some time to generate: "At the very beginning obviously people [teachers] thought we were completely insane." She reminisced about the day that the students were brought to the gymnasium to help map the ideal school ground:

> But just to show you the lack of support we were getting at that point from the staff… I'd asked the staff to provide their own writing materials for the mapping exercise, because it would have been really expensive for us to go out separately and purchase them, plus they were in the building. They showed up with nothing!!! Luckily, I arranged to have some entertainment that was great. I had an environmental singer come. I would have been dead in the water without this guy, because I had a sea of teachers looking at me with zero enthusiasm and a lot of antipathy. So that was round 1 with the staff.

 The nature of teacher involvement in lower SES schools was very different. Consistently in these schools, teachers assumed absolutely vital roles in the process of greening and it would be fair to say that without their involvement, the projects would not be in the state that they are in right now. At School E (very low SES), for example, teachers have been solely responsible for the project vision, planning, designing, fundraising and execution. An involved teacher there recalled how much work it has been: "This is a huge undertaking… just listing what we have done here and what we have planned… and this has been going on for 2 or 3 years… it is a huge undertaking." Another teacher from the same school agreed, noting that "I started the committee; I wrote the funding applications; I planted the garden with parents and students; I organize weekend maintenance days; I am still looking for more money." Interestingly, none of the barriers to teacher involvement that were identified by respondents in higher SES schools were identified by these teachers.

Access to Funding

Access to funding emerged as being another characteristic of greening initiatives that varied considerably and consistently as a function of SES. Of course all schools, irrespective of

SES, are eligible to apply for any of the countless grants that are available to greening projects. Despite the apparent level playing field in terms of access to applications, higher SES schools emerged as being more successful at securing grants, as well as other forms of donations.

At higher SES schools, funding was made easier due to the active and wealthy parents that were devoted to ensuring the success of the greening projects. Given that the majority of parents were professionals by training, they possessed the skills to fill out the (often) lengthy, time consuming and detailed forms necessary for fundraising applications. Equally important, the majority of parents worked part time, allowing them the time to research and fill out the forms. I asked one parent (School A) to describe her fundraising efforts. As illustrated in the following quote, she was aware of, had submitted applications to, and successfully received funding from countless organizations and granting agencies:

> First, it was the National Wildlife Federation in the States. Then, I got linked into Evergreen. We also got linked into Tree Canada, which was a really good funder. That is when I found out about Canada Trust. I was the first one to submit anything into Canada Trust, then the Board managed to wiggle its way into Boards at Canada Trust, one of the funding boards. We got money from them and also the Canadian Wildlife Federation. I went to an Environmental site for the Federal Government and pretty much got every greening body that I could think of to get money from. And you know what, we got money from almost every single one. So I think we ended up having about 6 or 7 grants. We got the Toronto Atmospheric Fund Grant for $2,000 which was great.

Projects at high SES schools were funded not only by public foundations and granting agencies. They also relied heavily on finances raised by very networked parents, who, in the words of one parent, had "friends in all the right places" (School A). These connections allowed them to access, with relative ease, direct donations from families and other community connections. In the words of one parent from School A:

> I think we have a lot of generous families and a lot of wealthier families, so we have very successful events every year… and everybody is very keen on seeing their money go into something like a school yard and go into something that's really tangible, and enriching their child's experience. One family gave us $10,000, and we had another family that is very involved in water… they had a huge family foundation and were very involved in waterfront preservation and they gave $20,000. That was huge. And that helped us. And then my husband…

Study participants from School A acknowledged that there were aspects of financial competition amongst the parents and that an interest in greening the school ground extended beyond wanting to make a better and healthier space for young people. This emerged in the form of fundraising 'competitions' where the parents ended up "competing to see who could donate the most money" (Parent, School A) (please refer to the opening quote of this paper).

At the other end of the SES spectrum, interviewees acknowledged that they struggled to raise even modest amounts of money. A teacher from School E (very low SES) reflected that "money can be definitely challenging especially for inner-city schools and schools that have difficulty just even having a child bring a dollar to school, it doesn't happen…so we are left to go it alone." Funding challenges in these schools are further compounded by the fact that less and less money is available for these (and other innovative) projects from the school board, meaning that schools are becoming increasingly responsible for raising their own money. In the words of the principal at School E, "There was a time when there was a certain amount of money was put aside in the budget even for what we now call 'beautification'… to buy bulbs or pretty plants for the front of the building. That's not here any more. So we have to make a commitment to that from within our own school from our budget."

The burden of funding applications is especially apparent to teachers in lower SES schools, who must balance these tasks with on-going teaching responsibilities. In fact, study participants indicated that the overwhelming nature of and increasing need for funding is a major barrier that stops other teachers from getting involved. One teacher from School E reflects:

> The process of applying for these grants is brutal! I understand the paperwork has to be there, but for teachers it is almost too much…and I know in several situations I've tried to get teachers involved in the fundraising and that's been a major barrier. Unfortunately our daily life as a teacher is just packed with things that we're dealing with during the day and in the evenings at home, and having to spend hours on an application. Don't get me wrong, I totally understand why because it has to be legitimate if you're receiving funding. It's just a brutal process and can deter… and it's probably the reason why I've gone to having Book Fairs because then I can control the money that's coming in. Normally that kind of money would be going towards library books, but I've decided that I'm going to take part of it…we as a school decided we were going to take part of it and put it into the green school ground.

Discussion

Green school grounds profiled in this study did differ in important, significant, and arguably troubling ways between schools with differing SES's. The findings revealed a consistent pattern highlighting that respondents from lower SES schools ranked the importance of spaces on an exemplary yard *higher* than their counterparts (Table IV); they also ranked the adequacy of spaces on their own yard consistently (and often significantly) *lower* than their counterparts (Table IV). These differences persisted with respect to teacher and parent involvement, as well as funding. The findings raise the problematic question: Are school ground greening initiatives serving to perpetuate the tensions between the 'have and have nots'?

In terms of **importance**, why did questionnaire respondents from lower SES schools rank all but one of the space types as being more important than their counterparts from higher SES schools? Perhaps the differences are related to the fact that respondents from lower SES schools see their school ground as assuming an especially important role in providing a holistic environment for the students. Children from these communities have been reported to rely more on and have more familiarity with their local neighbourhoods than wealthier children (Chawla, 2002; Faber-Taylor et al., 1998). Additionally, for many young people who come from poor homes with very small houses or apartments, outdoor spaces, like green school grounds, might be the only space to be with their friends (Thomson & Philo, 2004).[9] In these communities, it is plausible that the school ground may be one of the few spaces where young people are provided with opportunities to play freely, to experience nature, and to have quiet time outdoors. Conversely, children from middle or higher SES families might rely less on green school grounds, given their larger homes, garden spaces, and access to 'indoor' activities (e.g., computers, videos). They also have been reported to have a more "expansive spatial range than their working-class counterparts" as they are driven to a variety of extracurricular activities (Thomson & Philo, 2004, p. 124). The need for and time available for being on the green school ground might be significantly less for wealthy young people.

Perhaps then, the expectations as to the roles a school ground could and should assume are greater than in higher SES schools where students might have more opportunities to have these differing needs met. It is conceivable that in lower SES schools, where the importance is valued more, the potential for green grounds to assume vital roles in children's development is even greater. In these schools, perhaps implementing even small changes would make a world of difference to an otherwise impoverished natural environment. Other researchers have conjectured that even small changes in already disadvantaged communities can make notable differences (e.g., Coley, Kuo, & Sullivan, 1997; Kuo, Sullivan et al., 1998). Coley, Kuo, and Sullivan (1997), for example, explored the impacts of natural elements on social relations in low income housing developments and found that minor changes to the landscape had significant impacts on the residents. They attest that "for people who live in often barren inner-city neighbourhoods, planting a few trees may make a world of difference" (p. 492).[10] Perhaps the same holds true for school ground design.

In terms of **adequacy**, upon reflection, the finding related to the difference in adequacy of school grounds between schools with differing SES's should not be overly surprising. If every part of a school community is stressed and challenged, it seems fairly predictable that attention to school ground design and culture would not be a top priority. Furthermore, given that funding is

raised for greening initiatives almost entirely through fundraisers, grant applications, and donations, schools in more advantaged communities are likely more well situated to access the funders and get donations from parents (Wyzga, 2001). Bak (1995) may offer additional insight here, in her presentation of a series of 'tensions' to delivering environmental education in South Africa. She raises the point that perhaps in poorer communities and schools, limited financial resources might be better channelled into facilitating more immediate needs, like school infrastructure or health provision.

The relationship that emerged in this study between **SES and teacher/parent** involvement is an important one to note, and one that, to my knowledge, has not been elucidated in the literature on greening initiatives. Put most simply, at higher SES schools, parents are taking the lead, teachers are less involved, money seems easily accessed, and school grounds are more adequate. Conversely, at lower SES schools, teachers are taking the lead, parents are much less involved, fundraising is more difficult, and school grounds are seen as being more important, yet they are less adequate. These findings beg me to consider the works of researchers who study issues related to social capital. Glover (2004), for example, explored if and how community gardens are "a social context in which social capital is produced, accessed, and used by a social network of community gardeners" (p. 143). Perhaps such an exploration is warranted in terms of school ground greening initiatives. Are school ground greening initiatives sites where social capital is produced, accessed and used? If so, is there equal access to and distribution of social capital? Or is there inequality in the social capital as a result of its distribution? In his own research, Glover (2004) found that there was inequity in the distribution of social capital amongst the members of the community garden as a result of their advantaged or disadvantaged structural positions. The very fact that higher SES schools in my study had active parent bodies involved suggests that these projects would necessarily have more access to the social capital (and other forms of capital) necessary to develop a successful project. Conversely, in lower SES schools where teachers are assuming the leadership role in the greening initiatives, it seems to me that these projects would be able to access less social capital (and other forms of capital) because these teachers are juggling the project with their own teaching and other responsibilities. Based on these findings related to social and economic capital, perhaps funding applications should not be submission-based, but needs-based, with the aim of generating some equity in children's access to green space.

Closely related, when study participants from lower SES schools were asked to explain why so few parents were involved in the greening projects, many mentioned issues related to 'race,' claiming that new Canadian parents might not be interested/able to participate in greening

initiatives. These claims point to the fact that greening initiatives might well be perpetuating inequalities not only with respect to SES, but also race. Other researchers have pointed to these relationships between environmental education initiatives, such as greening projects, and race (Ruffin, 1996; Running-Grass, 1996; Russell, Bell, & Fawcett, 2000). Russell, Bell, and Fawcett (2000) note that "environmental education needs to come to terms with the monoculturalism that pervades it" and to "recognize that different cultures may value different bodies of knowledge and different ways of knowing" (p.207). Perhaps school ground greening initiatives need to come to terms with similar issues of homogeneity.

Study participants at higher SES schools cited countless barriers that limit teacher involvement in the greening projects. It is interesting to ponder why teachers at lower SES schools, who are actively involved in the greening projects, rarely mentioned these limiting factors. Somehow, they find ways to negotiate the difficult terrain of curriculum demands, testing, and labour unrest to find time and energy for the greening initiatives. And they manage to do this at a school already dealing with the challenges inherent in working in a lower SES school. It would be interesting to know if and how these teachers would be involved if they attended a school where someone else would take the leadership role (or a higher SES school?). Would they still be involved? Or would they direct their energies to some other program in the school that currently need someone to get involved? Are they simply the teachers that will help out with something – and if it weren't the green school ground, it would be the band, the sport team, or some other extracurricular activity? Hart and Nolan (1999) ponder similar issues related to teacher involvement in environmental education initiatives, noting from their own experience that "teachers choose to incorporate environmental education into their education programme based on internal perceptions rather than external constraints" (p. 25, see also Shuman & Ham, 1997). Perhaps these explanations bring us closer to understanding the disparity in teacher involvement as a function of SES.

Conclusions

Many important factors must be considered when planning children's environments such as green school grounds (e.g., budget, support of administration, physical resources, authentic student involvement). Among these factors, an important one that has been highlighted is SES. As with any research study, it is difficult to know how generalizable (if at all) these findings are. Is this a pattern one could expect to find in other schools?[11] Other school boards? Other communities? Other urban landscapes? Are school ground greening initiatives, while full of good intentions, serving to reinforce the inequalities of the urban landscape for children? Do

school ground greening initiatives simply allow the 'rich' to continue driving their children to school (and everywhere else), causing damage to the environment and individual health, and then compensate for their children's damaged environment by creating a little oasis of child-friendly greenness?[12] More research is clearly warranted to understand the complexities of these relationships and their implications for young people.

In noting these differences in greening projects at schools with varying SES, I acknowledge that I am only able to comment on select dimensions of the greening initiatives – namely perceptions of importance/adequacy, adult involvement, and funding. Some might argue that these dimensions have little to do in defining the 'success' of the initiative. An active parent committee and access to large funds do not necessarily correlate with other critical components of successful greening initiatives. As I have argued elsewhere, having money certainly does not ensure that a greening initiative is 'successful.' For example, if young people's voices are not heard in meaningful and authentic ways throughout the process of school ground greening, then can the project be deemed a 'success?' (see Dyment, 2004). And as Malone and Tranter (2003b) have noted, money spent on creating an elaborate green school ground means little if there is a lacking philosophical commitment to school grounds, embodied in mission statements, curriculum guidelines and educational policies. They note, "It is not sufficient to have child-friendly grounds. Having a philosophical commitment to the value of school grounds for developing children's environmental cognition is a vital ingredient" (p. 300).

Young people are remarkably resilient and judgement free; and ultimately they will evaluate both the process and product of their local environments (see Titman, 1994). Other critical dimensions (student involvement, student play, staff attitudes, curriculum content, and school policies), beyond merely the ones raised in this paper, must be considered when trying to evaluate children's spaces.

Table I Categories and Spaces Types Available on Green School Grounds

Category of Space	Space Types	Example
Traditional active play spaces		
	Open green space	Grass field/yard/pitch
	Hard surface play spaces for sports and games	Court/Rink
	Manufactured equipment and play structures	Jungle Gyms Tether Ball
Specific elements to support learning and play		
	Loose elements to support active play	Balls Portable equipment
	Built elements that support creative play	Musical installations Theatrical stages
	Built elements to support learning	Weather station Composter
	Natural elements to support learning	Food gardens Habitat areas Logs, Rocks, Ponds
Different size spaces		
	Places for individuals/pairs to find refuge	Forts/Dens Bush houses
	Small group gathering spaces	2-10 students
	Class size gathering spaces	30 students
	Larger than one class group gathering areas	>30 students
Spaces that consider the weather		
	Areas that are shaded	Grove of trees Built shade shelters
	Areas that are sheltered from wind	Grove of trees Outdoor structure
	Areas that are sheltered from rain and snow	Outdoor structure

Table II Profile of Questionnaire Respondents

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 III Profile of Schools

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 is 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 was 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.

Table IV Average Importance and Adequacy of Space Types by Socio-economic Status

		Importance		Adequacy	
Space Type		High SES[a]	Low SES[b]	High SES[a]	Low SES[b]
1.	Open green space	3.90	3.91	3.52**	2.96**
2.	Hard surface play spaces for sports and games	3.70	3.82	3.12	3.14
3.	Manufactured equipment and play structures	3.30	3.56	2.69	2.58
4.	Loose elements to support active play	3.66	3.61	2.93**	2.41**
5.	Elements that support creative play	2.75	2.79	1.40	1.27
6.	Build elements to support learning	3.38	3.43	1.90	1.57
7.	Natural elements to support learning	3.52	3.63	2.54**	1.88**
8.	Places for individuals/pairs to find refuge	3.31	3.55	2.36*	1.92*
9.	Small group gathering spaces	3.40	3.49	2.56*	2.06*
10.	Class size gathering spaces	3.55	3.76	2.60	2.27
11.	Larger than one class group gathering areas	3.27	3.43	2.60	2.41
12.	Areas that are shaded	3.88	3.89	2.33	2.10
13.	Areas that are sheltered from wind	3.44	3.63	2.09*	1.73*
14.	Areas that are sheltered from rain and snow	3.13*	3.45*	1.56	1.45

Note. Levels of importance/adequacy were based on a 4-point scale (1=not at all adequate, 2=not very adequate, 3=fairly adequate, 4=very adequate). The socio-economic ranges (0 = highest; 1 = lowest) included in these analyses are the extreme 'thirds': High (0 – 0.33) and Low (0.66 – 1).

[a]Number of respondents answering each question ranged from 57-61.

[b]Number of respondents answering each question ranged from 48-49.

*$p < 0.05$ **$p < 0.01$

Table V Average Initial and On-Going Involvement of Individuals by Socio-economic Status

Individual	SES	
	High[a]	Low[b]
Initial		
Teachers	3.34	3.36
Individual parents	3.58**	2.74**
Community members	2.78*	2.28*
On-going		
Teachers	2.98	2.89
Individual parents	3.19**	2.43**
Community members	2.30*	1.74*

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). The socio-economic ranges (0 = highest; 1 = lowest) included in these analyses are the extreme 'thirds': High (0 – 0.33) and Low (0.66 – 1).

[a]Number of respondents answering each question ranged from 40-44.

[b]Number of respondents answering each question ranged from 35-38.

*$p < 0.05$ **$p < 0.01$

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[1] A number of terms have been used to describe changes occurring on school grounds, including "school ground gardening," "school ground naturalization," "school ground restoration," and "school ground greening." While there are important differences between each term, and while each term is itself somewhat contested, for the purpose of this paper, "school ground greening" will be used to describe collaborative efforts to improve school grounds. (For a more detailed explanation of the differences between each term, see Houghton, 2003).

[2] This term is used, albeit cautiously, throughout this paper, to describe differences amongst 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. The schools profiled in this study have been assigned a number from 0 (Highest SES) to 1 (Lowest SES).

[3] Of course it is difficult to isolate issues related to SES from other variables that influence greening initiatives, such as gender and ethnicity.

[4] While students are often involved in certain aspects of school ground greening (see Dyment, 2004; Mannion, 2003), this paper reports on adult perceptions of these spaces.

[5] 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.

[6] In circumstances where the original questionnaire respondent was unable to participate in the follow-up interview, a replacement interviewee (with a similar role) was sought.

[7] The socio-economic ranges (0 = highest; 1 = lowest) included in these analyses are the extreme 'thirds': High (0 – 0.33) and Low (0.66 – 1).

[8] Like others who have used questionnaires, I felt, at times, "restricted by both questions and methods [that were] incapable of understanding the complexity" (Hart & Nolan, 1999, p.25). I was relieved to complement my findings from the questionnaires with case study interviews because they allowed me to ask more questions about teacher involvement in the greening initiatives. The apparent contradictions between the questionnaires and the case studies certainly reinforced the value of having a mixed methods approach.

[9] Of course additional factors, beyond SES, have limited the amount of urban nature that young people (irrespective of class) can access. Factors such as increased urbanization, increased fears about child safety, and decreasing natural outdoor spaces have all contributed to young people having less access to outdoor natural spaces (see Cunningham & Jones, 1996; Herrington & Studtmann, 1998; Malone, 2001; Rivkin, 1995; Tranter & Malone, 2004; Tranter & Pawson, 2001).

[10] I am moderately troubled by some of these claims (Coley, Kuo & Sullivan, 1997) and wish to clarify that I am not arguing that it is acceptable that schools in lower SES communities should only have meagre changes. They should not be satisfied with only slight changes. Such an assertion would, of course, on my part, feel somewhat patronizing. Ideally, issues of class would not assume a role in greening initiatives.

[11] Of course exceptions to this pattern certainly exist and some very heartening stories of school grounds (and other urban enhancements) in lower SES communities have been profiled (Centre for Ecoliteracy, 1999; Martil-de Castro, 1999; Trust for Public Land, 1995).

[12] I wish to acknowledge that this excellent question was raised by one of the anonymous reviewers of this paper.