WE WANT TO CREATE A 'BOTANIC GARDEN' IN OUR SCHOOLGROUNDS. CAN YOU HELP?

Malcolm Cox

Botanic Garden educators can readily include themselves in the range of qualified advisors on schoolground change, and can readily justify providing such advice within their services for schools.

Botanic gardens (BG's) are arguably in the best position to offer school communities ideas and information about diverse types and uses of plants. Botanic garden educators can help improve the understanding and use of plants in schools through services which extend the value of BG visits by teachers and students. In doing so, they can influence changes in one of the world's most impoverished environments - schoolgrounds. Worldwide, the quest to improve schoolgrounds is creating a growing demand for support of a kind that can best come from botanic gardens.

Some schools even see themselves as setting up their own 'botanic gardens'. Should BG educators encourage them to lower their ideal, arguing that botanic gardens are something much more grand? They might simply turn elsewhere for help and never really understand our message. Should we help them to undertake their projects and model salient aspects of botanic garden work? If they can see and do enough in their own grounds, they might not need to visit their local botanic garden again. BG educators need to be aware of this potential dilemma, and treat it as an underlying challenge to keep their own ideas and activity from becoming too static.

The purpose of this paper is firstly, to discuss connections between botanic garden educators and schoolground change, including some practical suggestions for action, and secondly, to propose a 'Learnscaping' framework for thinking about schoolground change.

LINKING THE INTERESTS OF SCHOOLS AND BOTANIC GARDENS

Here are five salient points of contact between schoolgrounds and botanic gardens.

1. Schoolgrounds are often large enough to grow a diversity of plants, and BG educators are experts on plant diversity.

Schoolgrounds can grow larger tree species than are suited to smaller domestic gardens. BG's can advise on a wide range of plants as well as their culture and uses, and sometimes help schools obtain plants not commercially available. Even on a small school site, small scale but intensive gardens are possible. It is not uncommon for botanic garden educators to be asked by schools to advise on planting and care of a large number of plants that they have acquired. For BG educators not familiar with school needs and politics, this can be a good starting point for an intensive 'dialogue' with one school, working with a small committee over a mutually suitable period to achieve even a small but positive change.

2. Schoolground plantings can be designed around specifically educational themes.

BG's enjoy the challenge of organising plants in new ways, e.g. garden in a box, fibre plants garden, taxonomic groupings, medicinal herbs, locally natural vegetation, climbing trees, crops. It is important to encourage schools to aim high in their landscape planning ideas, and equally important to promote a parallel range of practical and short-term outcomes for schools to try out.

3. There are competing interests in schoolgrounds: amenity and ornamental layout can conflict with educational plant layout.

BG educators understand this too well from their own work settings, and can provide advocacy for educational ideas that can be integrated with other needs in schoolgrounds. For a start, adult and childhood agendas can easily follow different paths. Children need to be among trees and will climb them if necessary. This 'issue' may be solved by planting groves of small species, or deliberately shaping larger species to allow children to 'get into them' without creating a safety problem. Allowing potentially damaging interaction with gardens and plants is not in adults' interests (particularly those wanting aesthetic appeal), but some amount is essential for children.

4. Environmental education is becoming more active and more urgent.

Both schools and BG's reflect community support for environmental action. Schools need BG visits that relate to an active conservation project, in their grounds or in the community. Some schools and school systems need BG educators to initiate projects to demonstrate good environmental education practice. Some botanic gardens are already helping schools to help 'rescue' threatened species through comprehensive programmes of seed collection, plant growth and care, site analysis and eventual land rehabilitation. It

may be hard to convince teachers, but a seemingly small problem can be built into an integrated curriculum project spanning several months and forming a complete 'story' of the mathematics, politics, science, literature, history, communications, drama, etc. behind an actual environmental achievement.

5. Teachers need skills, ideas and activities, and someone to 'show them the way'.

It is easy to assume that any teacher is also a gardener, but not many adults feel confident about sowing seeds and planting trees with children, let alone take on extensive garden design and development. Apart from working with select schools or teachers, BG educators can organise meetings and courses to help teachers practise what they would like children to do.

A basic course could comprise sessions something like this: a. essential nursery design and equipment; b. propagation - seeds and cuttings; c. planting and care of trees and shrubs; d. planting and care of herbaceous plants, baskets, etc.; e. plants for special places and purposes; f. 'cook, colour and craft' things to do with plants; 9. plant records, labels and a school herbarium; h. managing change in school landscapes. BG educators have even arranged courses for grounds staff, conducted by horticulturists. Such events, particularly if offered free and undertaken in the pleasant atmosphere of a botanic garden, can help increase practical support in schools for ideas and gardens that would otherwise be met with antagonism.

Another successful idea has been that of conducting sharing sessions or 'network meetings' in which school staff and representatives come together quite informally at a botanic garden and talk about their problems and achievements. It is reassuring for them to realise that others have similar problems, or to give someone else an answer from their experience, and a relief to find a ready answer to a plant question. In this case the BG educator should endeavour to initiate, then facilitate, then slowly 'push' meetings out into the school community to evolve further if necessary.

'LEARNSCAPING' - A FRAMEWORK HELPFUL TO BOTANIC GARDEN EDUCATORS INFLUENCING CHANGE IN SCHOOL GROUND.

'Learnscaping' (learning-oriented landscaping) describes a framework for thinking about schoolgrounds. It can help anyone including BG educators who may be trying to to help schools change their grounds for environmental education. The framework outlines why and how to think, plan and act, rather than what to do.

The purpose of adopting a learnscaping approach is to change the way

we think about schoolgrounds. It will help BG educators to apply a learnscaping framework in their attempts to influence schoolground change, if and when such opportunities arise. The following ideas are summarised from the author's views on the integration of landscape and curriculum work (Cox, 1991), which draw upon landscape perception, architecture, curriculum change and environmental education. Given this summary form, explanations of terms and ideas included here. However most terms should be familiar to BG educators in some form.

Learnscaping aims to consider change at four levels - values, planning, design and development. Change can be stimulated at any level, but it is ultimately underlying values changes that produce new approaches to planning, design and development. The underlying concepts of worthwhileness, problem solving and diversity are three key concepts that influence values change, and influence what happens at the other levels in turn. An example of each is given in Fig. 1.

Similarly, planning can consist of various approaches which must take account of the issue, the team solving it and the method used, as simplified in Fig. 2.

Design, i.e. determining 'on paper' the nature and purpose of the finished product, must reconcile three concepts - education, pleasure and sustainability. These often conflict with each other in the same way as education, amenity and science/conservation design interact in botanic gardens (Cox, 1988). The differences among possible design principles derived from these concepts are indicated in Table 1.

Finally development is what actually happens or changes in the curriculum and schoolgrounds. It must be relevant to the learners (especially the children, whose real needs may be the opposite of what adults try to impose). It must be evaluated critically by research on action as it happens and by those involved (action research), and it must embrace diversity by integrating as many different elements (people, plants, knowledge, etc.) as possible.

This is all summarised in Table 2. The learnscaping framework itself is a synthesis of these and related ideas, as outlined in Table 3.

There cannot be a single formula for schoolground change, or for the role of BG educators in such change. Any attempts at creating such as formula would, for a start, be an attempt to limit diversity. Even the framework in Table 3 needs competing frameworks to stimulate ideas and discussion about the topic, and BG's need to refine from these frameworks of their own.

This broad outline bypasses many essential examples of achievement, experience and insight that help to clarify that many of the starting points to solving schoolground issues are very

simple, integrating ideas and actions, and it is in these starting points that most BG educators will find opportunities to accumulate their own ideas and insights (and relate them in Roots). Table 1 offers some challenging kinds of starting points, some of which can form simple extensions of work done in botanic garden education programmes.

However, just as it is limiting to focus only on the plant content of schoolgrounds (diversity of soil, rocks, animals, construction, play spaces and artworks is also important), it is also limiting to focus on design alone. Some schools may do this, and wonder over time why nothing has changed or no development taken place. Awareness of the nature and interplay of values, planning and development, as well as design, and their roles in school administration and curriculum development, can provide BG educators with the background required to give schools more than they think they want when they start asking BG's for help. The ultimate challenge is to change the way school communities think about their own schoolgrounds.

REFERENCES

Cox, M; 1989; "From the Bottom Up: Designing Gardens for Education" in Botanic Gardens Education, Australian National Botanic Gardens Occasional Publication No. 11, Australian Government Publishing Service, Canberra.

Cox, M; 1991; "Schoolgrounds: A case for the integration of landscape and curriculum work", Master of Education Studies Thesis, University of Queensland, Brisbane.

Fig. 1

A set of continua of select values impacts in schoolgrounds

< [Implications of the traditional paradigm: minimal scope for change]		[Implications of an ecological > approach: maximum scope for change]
1. A view of worthwhile content: place learning and behaviour.		
Schoolgrounds already contain all the places and feelings that children need; order is maintained by rules and authority.	<---------->	Schoolgrounds can never have enough different places and feelings for children; order maintained by negotiation and consensus.
2. A view of problem solving: 'adventure' playgrounds.		
Designed structures can be made which meet physical and all needs of play; problems are designed into equipment for children to solve, usually as individuals.	<---------->	Both designed structures and unstructured materials are other necessary to satisfy play needs; problems are often created as part of the play process, and require collaborative solutions.
3. A view of diversity: climbing trees and plants for handling.		
Trees and plants should not be climbed, damaged or handled because of risks to children and plants; risks are minimised.	<---------->	Ways of providing trees for climbing, and plants for playing with, should be designed into the school landscape to increase potential for learning; risks are managed.

Fig. 2

A set of continua of approaches to schoolground planning

<[Implications of planning that is restricted and informal]:	[Implications of a comprehensive, > formal planning process]:
1. Approach to the issue.	
Development is limited to the ideas and actions of those who have personal commitment. Separation of landscape and curriculum is taken for granted.	<----------> Development is extended to the discovery and consideration of the views of as many people as possible. Landscape and curriculum are integrated wherever possible.
2. Approach to the planning unit or team.	
Narrow representation of the school community. Principles decided by a landscape architect commissioned to do planning. (Experts 'on top'.)	<----------> Broad representation of the school community. Specialists responsive to principles set by the team. (Experts 'on tap'.)
3. Approach to the planning methodology.	
Individual or ad hoc group works at own pace in isolation to plan projects based on one-off responses to assumed values.	<----------> A team works formally and accountably, sets policy, priorities and explicit principles based on stated values and action science.

Table 1.- **Select design principles and features derived from them.**

Principles.	Examples of features to be developed.
Pleasure:	
- design for social development	- secluded spaces for group play or discussion
- design for comfort	- shade trees, shade structures, windbreaks
- design for creative and manipulative play	- security fencing for 'loose parts' playground, digging patches, garden beds, dirt mounds, climbing trees and shrubberies
Education:	
- design for understanding diverse uses of plants	- beds of food plants, fibre and dye plants, herbs and medicinal plants, timber trees
- design for scientistic understanding of plants	- taxonomic groupings (e.g. by genera, families or broader groups)
- design for habitat protection and ecological understanding	- areas of protected or regenerating local vegetation; recycling depot
Sustainability:	
- design for both education and pleasure	- combine taxonomic planting with play or lunch areas; build a shadehouse that is accessible for play and instruction
- design for security, safety and supervision	- security fencing of manipulative play areas; plant so that play supervisors can see most children from the fewest vantage points
- design for sustainable harvest	- provide quantities of useful plants (e.g. for paper, weaving) sufficient to meet demand from classes through easy regrowth or replanting

Table 2.

A matrix of concepts critical to change at each level of schoolground change.

LEVEL:	values	planning	design	development
CONCEPTS:	worthwhileness	mutual adaptation	education	relevance
	problem solving	collaboration	sustainability	action research
	diversity	representation (of school community)	pleasure	integration

Table 3. **Characteristics of the learnscaping process:**

A framework for implementation of schoolground change.

Values change:

Issue - adopting schoolgrounds as a significant curriculum setting for environmental education

Team - system- and school-level decision makers responsible for all facilities and curriculum

Methodology - critical review of the nature and role of schoolgrounds and environmental education

Planning change:

Issue - the integration of landscape and curriculum planning for schoolgrounds

Team - a decision-making group representative of all sectors of the school community

Methodology - policy-making, idea management and formulation of an explicit planning process

Design change:

Issue - the integration and sustainable use of features designed for education and for pleasure

Team - the planning team in collaboration with consultants and interested stakeholders

Methodology - masterplanning, setting design principles, frameworks for implementation

Development change:

Issue - changing curriculum in terms of schoolground content that is more diverse and worthwhile

Team - teachers, consultants and others who can attempt solutions for schoolground problems

Methodology - action research in integrated environmental education