Benefits of School Food Gardens
Written by Chenae Neilson for Cultivating Community

Introduction

The potential of school food gardens (SFG) to foster positive outcomes and contribute to a wide array of benefits is not a new declaration. There is ample anecdotal evidence indicating the positive impact of food gardens on student health, education and awareness of the physical environment. Over the past decade studies empirically testing these claims have flourished, confirming the profound effects school gardens can have not only for students but also teachers, parents and the wider community. Here, we will provide a review of the current literature exploring the benefits of SFG on education, health, physical environment, recreation, sustainability and social relationships. This review has drawn from a variety of research disciplines to present a comprehensive evaluation of the benefits of school food gardens.

Within Australia interest in school food gardens is increasing. Within our own city of Melbourne it is estimated there are over 50 school food garden programs operating. Research and evaluations on both the benefits and success of the programs are also developing. Although much research on SFG is coming out of the North American context these studies also provide us with valuable information and set out the types of effects we can expect. While the onus of developing a SFG primarily falls on the school itself there are also a number of organisations and programs aimed at providing the necessary support and education for getting started and maintain a blossoming space.

This review is designed to provide a concise summary of the current literature on school food gardens, to explain the major benefits under the key areas: education, health, physical environment, recreation and enjoyment, personal development and social relationships.

1. Education

Positive impacts on traditional disciplines: Recent research carried out in the United States sought to explore the relationship between school food gardens and academic performance (Fisher 2014). Similar studies have been carried out in Australia highlighting the positive effects SFG can have on learning across traditional disciplines of maths, science and English.

Promotes physical education: Food garden spaces have been identified as particular educational spaces as they promote student participation in an active environment. However, unlike other physically active programs, for example physical education classes, there is no competitive element, allowing the skills and abilities of different students to develop.
Active engagement of students in their studies: Studies have indicated school garden programs that are inclusive of students and the wider community from the point of implementation are powerful. Some cases have shown positive experience for students, and continued interest in the garden by engaging students in both the design and building processes. In this situation students are given the opportunity to act as creators and not merely the consumers of the curriculum (Rahm 2002).

Useful for students with complex needs: A study by Block et al (2012) found that school food gardens had positive effects in particular on children described as “non-academic” or exhibiting “learning difficulties” and challenging behaviours. The space for education was described by teachers as “transformed” for children with complex needs.

Offers experiential learning: SFG promote and offer space for student engagement in experiential learning (Cutter-MacKenzie 2009). While many experiential learning activities are classroom based, the garden is an alternative space and indeed living classroom for math, science, geography and environmental learning (Lyon and Bragg 2011).

Green space enhances learning: In the last decade there has been a movement towards “greening the school yard” which has been shown on numerous occasions to enhance student ecological, social and academic learning (Dyment and Reid 2005; Malone 2005; Dyment and Bell 2007, Maller 2009). Due to their similarity and goals, SFG become an extension of the green schoolyard.

2. Health

Positive mitigation of adopting poor diet: Modern children face numerous obstacles that prevent them from adopting healthy diets including taste preferences, knowledge, availability, convenience, peer pressure and parental or school support (O’Dea, 2003). SFG are seen as a positive mitigation strategy to overcome these issues.

Encourages healthy food consumption at home: Research from Queensland has acknowledged links between participation in SFG and more positive diet choices, both by urban schoolchildren and their families (Guitait et al 2014). The study found that school gardens allowed children to eat at home food grown in the school gardens to encourage healthy and fresh food consumption and at times supplement family foodstuffs.

Increased willingness to try new fresh foods: Research has shown a link between increased willingness to try diverse unprocessed foods as a result of developed understanding and interaction with food production (Allen et al 2008) and that students’ improved knowledge of fruits and vegetables enhances their consumption of these food plants (Guitait et al 2014). Enhanced nutritional knowledge therefore has been shown to have a physical impact.

Food gardens are spaces of physical activity: Through digging, weeding and other physical movements students benefit from non-sedentary learning spaces (Bell and Dyment 2008). Given the large proportion of time contemporary students are restricted to sedentary activities, active participation is incredibly valuable.
3. Physical environment

**SFG have a positive effect on the physical school grounds:** Gardens create more natural and dynamic spaces and gardens provide greener (colour pallet) school grounds (Dyment 2005).

**Cooling effect on the physical environment:** Gardens have a cooling effect in environments that are largely asphalt or concrete. Green surface areas both diffuse and absorb solar energy o lower temperatures (Block et al, Williams et al 2014).

**Bond between humans and natural living system (biophilia):** Help develop recognition for both our instinctive connectedness and dependence on nature and natural systems, which are fundamental to developing awareness and practices of sustainability (Kellert and Wilson 1984, Ralston 2011, Green 2004).

**SFG are powerful and rich sites for developing awareness of the biophysical environment:** Students can observed plant growth cycles, understand soil make up as a living organism, water cycles and develop an understanding of food production and waste cycles. Mayer-Smith et al (2007) identified a change in children’s relationship to their wider environment, they noted that, “the majority of children shifted from seeing the environment as an object or a place, to a view characterized by the interconnectedness of humans and environment” p.83.

**Sites of spontaneous play:** Gardens act as sites of a variety of spontaneous play opportunities for children (Malone 2005, Dyment, et al 2009).

**Foster reconnection to local food:** Several researchers have commented that SFG can act as spaces to (re)connect children with locally grown food whilst simultaneously connecting them to the places where food is grown (Capra 2005, Waters 2008, Gibbs et al 2013).

4. Recreation and enjoyment

**Enjoyment and pleasure can come from a variety of sources in the garden:** For example, through connection to nature, building social relationships and the gratitude of nurturing and watching something grow (Simovska 2008). Recreation and enjoyment is crucial to the well-being of all children. Across most studies the enjoyment of those who participate in SFG has been assessed and recognised. Overwhelmingly students report favourable experiences and enjoyment in the school garden across reviewed studies.

5. Personal Development

**Foster positive personal attributes:** School gardening has been shown to increase self-esteem, help students develop a sense of ownership and responsibility (Alexander & Hendren 1998). Through sharing knowledge and teamwork in garden classes students have expressed higher levels of compassion and communication with others. Results by Block et al (2012) showed SFG contribute to personal development including, increased student engagement and confidence, teamwork and social skills.
Encourage practical lifestyle skills: Participation in SFG and related cooking programs has been shown to increase personal confidence and also confidence in new skills such as cooking and gardening.

6. Social relationships

SFGs encourage a sense of belonging to place: For example (Blair 2009) notes that students and in addition the wider school community have a sense of ownership and pride in the garden. Through repeated engagement over time, in a transitional space changing over the year according to the seasons, the site acts as a focal point of belonging to place.

Visible and accessible community site: SFGs can act as a community asset situated in the schoolyard (Blair 2009). Gardens become an opportunity to foster links between school and community. For example, gardens act are positive sites for BBQs, fundraisers and parent recreation evenings.

Tool for creating partnerships: Schools can move even further afield, as in place-based learning, developing collaborations with rural community partners that aid and facilitate the study of local natural resources (Emekauwa, 2004) or creating partnerships with university forestry departments, city park naturalists, and local businesses to facilitate the study of urban forest ecology (Milton et al 1995).

SFG can be places of social connection between students, teachers, parents and communities: Puthukuchi (2004) found that through participating in SFG students possess an appreciation for working with neighbourhood adults and have an increased interest for improvement of neighbourhood appearance.

Medium for introducing elements of multicultural education: For example the growing of diverse culturally appropriate foods (Block 2012). This can help develop appreciation from young people of the value and significance of worldwide food cultures and what we commonly eat today. Food is widely recognised as a key element in overcoming cultural barriers, the sharing of food is a major step in cultural sensitivity and appreciation.

Increase school’s reputation: Case study explorations by Armstrong (2000) and Teig et al (2009) report that in their studies SFG have raised a school’s profile and local reputation though creating a unique and special local identity. A consequence was that SFG was a key attractor for new families and numerous interested visitors.

Conclusion

School food gardens generate an array of diverse benefits for students, extending to teachers, parents, the local environment and the wider community. While most SFG’s are targeted to primary level their benefit is not restricted to early development years, but are also valuable at the secondary level through to tertiary. As confirmed by the literature SFG are powerful and fruitful learning spaces. While key beneficial areas such as education, health, physical environment, recreation and enjoyment, personal development and social relationships have been separately categorised it is important to realise they each interrelate and have complementary effects.
References:


Armstrong, D, 2000, A survey of community gardens in upstate New York: Implications for health promotion and community development, Health & Place, 6,4, 319-327

Bell, A, and Dyment, J, 2006, Grounds for action: promoting physical activity through school greening in Canada, Toronto, ON: Evergreen


Block, A, Livesley, S, Williams, N, 2013, Responding to the Urban Heat Island: A Review of the Potential of Green Infrastructure, Victorian Centre for Climate Change Adaptation


Emekauwa, E, 2004, They remember what they touch: The impact of place-based learning in East Feliciana parish, Rural School and Community Trust

Green, V, 2004, An Exploration of School Gardening and Its Relationship to Holistic Education. University of Guelph

Gibbs, L, Johnson, Block, K, Macfarlane, S, Gold, L, Kulas, J, Townsend, M, Long, C and

Henryks, J 2011, Changing the menu: rediscovering ingredients for a successful volunteer experience in school kitchen gardens Local Environment , 6, 6, 569–583


Lyon, A and Bragg, L 2011, Food for thought: mathematics of the school garden, Australian Primary Mathematics Classroom, 16, 1


Mayer-Smith, J, Bartosh, O, & Peterat, , 2007, Teaming children and elders to grow food and environmental consciousness. Applied Environmental Education & Communication, 6, 1 77-85


Pothukuchi, K, 2004, Hortaliza: A youth ‘nutrition garden’ in southwest Detroit, Children, Youth and Environments, 14,2, 124-155


Ratcliffe, M, Merrigan, K, Roger, L, Goldberg, P, 2011.Theeffectsofschool garden experiences on middle school-aged students’ knowledge, attitudes, and behaviours associated with vegetable consumption, Health Promotion Practitioners 12, 36–43


Wells, N.M, 2000, At home with nature: effects of greenness on children’s cognitive functioning. Environment and Behaviour, 32, 6, 775–795

Williams, N, Coutts, A, Livesley, S, 2014, Our cities need more trees and water, not less, to stay liveable, ECOS, 192