

Benefits of Gardening for Children

Gardening provides different forms of engagement for children, including designing, planting, and maintaining gardens; harvesting, preparing, and sharing food; working cooperatively in groups; learning about science and nutrition; and creating art and stories inspired by gardens. The studies summarized below have been selected because they include control groups, pre- and post-measures, well controlled correlations, or in-depth qualitative analyses. For more studies, see Blair (2009), "The child in the garden: An evaluative review of the benefits of school gardening."

Key Studies

Lifelong Benefits

Exposure to healthy foods, moderate physical activity, and positive social interactions while gardening in childhood can lead to a lifetime of gardening, as evidenced by semi-structured interviews conducted with

participants ranging in age from 18-85 years old (Gross & Lane, 2007). In a nationwide telephone survey of 2,004 respondents, people who reported picking vegetables, taking care of plants, or living next to a garden in childhood were more likely to continue gardening as they aged and to form lasting positive relationships with gardens and trees (Lohr & Pearson-Mims, 2005).

Positive Social and Interpersonal Skills

When third to fifth grade students who participated in a one-year gardening program filled out a survey of life skills, they showed a significant increase in self-understanding, interpersonal relationship skills, and ability to work in groups compared to nonparticipating students (Robinson & Zajicek, 2005). Qualitative surveys of 52 second and third grade students working in a community garden classroom program in San Antonio revealed that participants were likely to have positive bonding experiences with their parents and other adults (Alexander, North, & Hendren, 1995). Children

who garden are more accepting of others who are different from themselves (Dyment & Bell, 2006; Eames-Sheavly, 1994), a finding consistent with research that indicates that community gardening projects "grow" community (Glover, 2004).

Healthy Eating and Nutrition

Children who grow their own food are more likely to eat fruits and vegetables (Bell & Dyment, 2008; Libman, 2007; Lineberger & Zajicek, 2000; Morris, Neustadter, & Zidenberg-Cherr, 2001; Pothukuchi, 2004) and to show higher levels of knowledge about nutrition (Canaris, 1995; Koch, Waliczek, & Zajicek, 2006; Pothukuchi, 2004). They are also more likely to continue healthy eating habits throughout their lives (Morris & Zidenberg-Cherr, 2002). Eating fruits and vegetables in childhood has been shown to be an important predictor of higher fruit and vegetable consumption in adulthood, which can help prevent or delay chronic disease conditions over a lifetime (Heimendinger & Van Duyn, 1995).

Science Achievement and Attitudes Towards Learning

Students who are actively engaged in garden projects tend to enjoy learning and show improved attitudes towards education (Canaris, 1995; Dirks & Orvis, 2005). Third, fourth and fifth grade students who participated in school gardening activities scored significantly higher on science achievement tests than students who did not experience any garden-based learning activities (Klemmer, Waliczek, & Zajicek, 2005). Parent involvement, shown to enhance student achievement (Henderson & Mapp, 2002), increases at schools with garden programs (Alexander, North, & Hendren, 1995; Dyment & Bell, 2008).

Self-Efficacy and Enhanced Stewardship

The process of gardening gives empowering experiences. Students engaged in designing and maintaining gardens



show an increase in self-efficacy (Lekies, et al., 2006; Poston, Shoemaker, & Dziewaltowski, 2005), proenvironmental attitudes (Mayer-Smith, Bartosh, & Peterat, 2007; Skelly & Zajicek, 1998; Skelly & Bradley, 2007) and environmental stewardship (Alexander, North, & Hendren, 1995; Mayer-Smith, Bartosh, & Peterat, 2007; Pothukuchi, 2004; Waliczek, Bradley, & Zajicek, 2001). Plus, active gardening, such as picking flowers or planting trees as a child, has been shown to have a strong influence on how natural areas and gardens are valued in adulthood (Lohr & Pearson-Mims, 2005).

Special Populations

A study of children with learning disabilities who engaged in gardening found that they increased their nonverbal communication skills, developed awareness of the advantages of order, learned how to participate in a cooperative effort, and formed positive relationships with adults (Dyment & Bell, 2006). Juvenile offenders who enjoy gardening show improved self-esteem, interpersonal relationships, and

attitudes towards school (Cammack, Waliczek, & Zajicek, 2002; Flagler, 1995; Waliczek, Bradley, & Zajicek, 2001). A pre-post study utilizing the standardized Behavior Assessment System for Children showed that co-ed groups of juvenile offenders who participated in a school gardening program significantly improved their interpersonal skills (Cammack, Waliczek, & Zajicek, 2002). Gardening has long been recognized as a therapeutic healing activity which can positively impact mental health and well-being (Bell & Dyment, 2008; Ulrich, 1999).



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