

12-1-2007

Plants and Textiles: A Legacy of Technology--Introducing a New On-Line Project for Youth

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Recommended Citation

Eames-Sheavly, M., & Coffman, C. W. (2007). Plants and Textiles: A Legacy of Technology--Introducing a New On-Line Project for Youth. *The Journal of Extension*, 45(6), Article 26.
<https://tigerprints.clemson.edu/joe/vol45/iss6/26>

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Plants and Textiles: A Legacy of Technology--Introducing a New On-Line Project for Youth

Abstract

Plants and Textiles: A Legacy of Technology is a plant- and textile-based on-line project with activities for teenaged youth. The detailed Web site includes an introduction to the project and addresses all components of four detailed activities, with other resources and information available at the site. This article introduces the project, its components, and outcomes and impacts from project participants, university students, and adult leaders.

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Background

The number of older youth in 4-H, including textile and horticulture projects, continues to decline. In contrast, Cornell University students are enthusiastic about horticulture and textile courses, particularly when combined with technology, art, and history, and such courses are often over-enrolled. A teenaged youth member of the Cornell Cooperative Extension (CCE) Youth Development Program Council stated in a 2002 program review that teens would welcome a 4-H technology program that "isn't just computers"--a program that explains "how things are made." Although New York schools offer technology courses, many students graduate with only a few semesters of middle-school technology. In addition, recent studies show that out-of-school activities rival formal classrooms in the amount of time devoted to technology education.

In response to this situation, two senior extension associates in the departments of Fiber Science & Apparel Design, and Horticulture, found their interest piqued. Perhaps greater numbers of middle- and high-school youth could be engaged in experiential learning through plants and textiles. Extension educators in New York confirmed that teenaged youth were, in fact, eager for new opportunities for hands-on learning and that often many plant-related activities are routine to them by this age.

To meet this need, the authors developed the Plants and Textiles: A Legacy of Technology project activities with university students as assistants and received guidance and feedback throughout the process from middle- and high-school-aged youth and their teachers and leaders. The project is entirely on-line at <<http://www.hort.cornell.edu/plantsandtextiles/>>.

Non-formal educators, as well as teachers, can use this project in its entirety, or try individual activities for a shorter term effort. Currently, four detailed activities are on-line, with plans to add more in the future. It is a unique opportunity to engage youth in an exploration of how plants yield fibers, dyes, and chemicals that are used to make textile products and how changes in traditional technologies affect product production today--all with a creative twist.

Project Components

The Plants and Textiles project focuses on past and present technologies that convert plant materials into fibrous products. Project components include a tool, the associated technology, research, and community connections. Current activities are indigo dyeing, mat weaving, paper making, and rope making, with plans to complete net knotting in the future. Each activity begins with making a tool and then using the tool in a traditional activity. Students then use the Internet to learn about comparable technologies and products in today's market and to further explore plant fibers and textiles. Last, they involve others from their community.

An example of one activity is paper-making; youth begin by making a mold and deckle and then make paper from a diversity of plant materials. They research the history, science, and technology of paper and can expand the activity in various ways. Youth are encouraged to put their own distinctive spin on the activity, experimenting with different plant materials to make the paper and then, using it for a unique purpose.

A key part of the project is connecting to the local community. Young people might investigate plants that were critical at one point in the area's industrial history. Participants can work with local artists, historical associations, and museums or talk with older residents. Youth are encouraged to share what they have learned by developing a display, exhibit, or educational program. They may collaborate with a local weaver's guild to offer workshops, organize a fieldtrip to an appropriate factory, or invite a professional in an appropriate field to speak to a class or club. The Web site suggests numerous ideas for showcasing young people's work in diverse ways throughout the community.

Outcomes and Impacts

Program evaluation was based on responses from four groups: 1) undergraduate students who helped develop and test the activities, 2) middle- and high-school students who tested activities and participated in the program, 3) adults who served as 4-H leaders and teachers, and 4) collaborators at partnering agencies.

Three Cornell undergraduates and 29 trained teens reported an increased knowledge about plant and textile technology and an increased interest in youth development and informal education. According to the leaders/teachers, young people who participated in the program not only gained experience with plants and textiles, but were able to place this knowledge in a historical or environmental context. Students demonstrated problem solving, leadership skills, experimentation, and creativity.

The authors learned that program depth encouraged a range of partnerships. One New York county Extension program strengthened existing partnerships with a farmer's museum and with the Master Gardener program. Another formed a new alliance with the local historical society and with local high schools. A third county Extension program connected with Agriculture in the Classroom and with elementary and middle school teachers who used the program to teach writing, history, technology, science, and math.

On campus, the link between undergraduate study and outreach was nurtured through student employment, as well as through an Art of Horticulture course for undergraduates. Horticulture 203 is a survey course that explores plants used in or as art, from living sculpture methods (such as bonsai, topiary, and tree sculpture), to floral design and plant fibers and dyes used in or as art. A number of student final projects were initiated that focused on fibers and dyes, demonstrating an enthusiasm for this topic.

Email communications from educators nationwide have indicated that the plants and textiles Web site is very effective in providing quality activities for teenaged youth. At an on-campus lab session with Cornell undergraduates, the site was rated as the best, easiest to navigate, and useful garden-based learning Web site.

Conclusion

This project emphasizes the Youth Development Program Council priority of "enhancing science and technology literacy." It engages and enriches teenaged youth by combining a fun approach with technological experience and academic depth. Program delivery links 4-H to museums and historical associations, using local resources and involving youth in their communities.

To explore the Plants and Textiles: A Legacy of Technology project, please, visit the Web site <<http://www.hort.cornell.edu/plantsandtextiles/>>. The authors welcome feedback, as well as opportunities to partner and to introduce new plants and activities to the site.

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