

Middle school students introduced to arboriculture topic

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Middle school students identified structural defects in trees growing in their schoolyard. The topic proved to be a good curriculum augmentation. Credit: photo by Laura Sanagorski.

A potential new sixth grade curriculum augmentation has been introduced to teach youth about an important topic: how to recognize structural defects in trees. "This highly important topic is rarely

presented in middle or even high school," said author Laura Sanagorski. Sanagorski and coauthor George Fitzpatrick reported on their introduction to the new subject matter—which they tested in sixth grade science classes at three Florida middle schools—in *HortTechnology*.

Sanagorski and Fitzpatrick explained that [trees](#) in urban areas are more likely to develop structural defects that can be costly, dangerous, or more maintenance-intensive than trees in natural settings. "People need to understand how trees grow in the urban environment and how to recognize potentially hazardous structural defects, yet this is not a topic regularly presented in school curriculum," Sanagorski said. "Trees are the foundation for healthy social ecology, and have proven to be beneficial for children socially, physically, and emotionally. Teaching youth about trees results in educated adults with sensitivities to trees and nature."

The researchers explored the feasibility of introducing structural defect recognition as a potential curriculum enhancement for sixth grade students, and then evaluated two methods of teaching the topic. "We compared hands-on, experiential instruction with a passive, illustrated lecture style instruction," Sanagorski explained. Although students exposed to both methods of instruction increased their overall ability to recognize structural defects in trees, those who received the curriculum via illustrated lecture style had significantly higher scores on the posttest than students exposed to the same material via a hands-on approach.

Because the students were most successful in learning to recognize circling roots, codominant trunks, and attachments of equal sizes, the researchers recommended that these three defects should be the first introduced in sixth grade curriculum. They also suggested introducing the subject as a recurring topic, rather than a single, stand-alone module.

"We observed that students reacted positively to the post-test and most

exhibited pride in successfully recognizing structural defects in trees. As a result of the instruction, a number of students expressed their desire to be more involved with the care and selection of trees both at home and around their school," the authors said. "We observed that many students made cognitive associations with what they learned to their real-life outdoor environments."

Sanagorski and Fitzpatrick recommend that educators incorporate topics such as tree structure into their teaching. "The [students](#)' positive reaction to this instruction supports our conclusion that youth can grasp and successfully apply technical arboricultural concepts and become caring stewards for our urban forests, even at a young age."

More information: The complete study and abstract are available on the ASHS *HortTechnology* electronic journal web site:
horttech.ashspublications.org/...nt/24/1/127.abstract

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