Urban Middle School Student Learning of Local Tree Diversity & Common Ancestry

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Curricular Resources and Research Methods

Two part curriculum:

Fall: Focus on leaves, fruits, & common ancestry

Spring: Focus on flowers & common ancestry

Middle School Students Using the Leafsnap app: Leafsnap assesses the similarity of the local plant identification apps. Instead of relying on expert knowledge, Leafsnap may help to engage students with diverse skill sets in commonalities and differences of the plant boundary. Technical solutions are used to select the most likely plant identity. Leafsnap can assist students in identifying the correct classification and understanding the unique features of local trees. It is a smartphone-based tool that allows for remote identification of plants.

Curriculum implemented in classrooms of 12 NYC middle school teachers. - 1 Manhattan (6th grade) - 2 Queens (6th & 7th grade) - 1 Brooklyn (8th grade) - 2 South Bronx (6th & 7th grade)

Teachers attended a week-long summer PD with a botanist; one day Spring flower PD:

1 Manhattan (6th grade) - 2 Queens (6th & 7th grade) - 1 Brooklyn (8th grade) - 2 South Bronx (6th, 7th, & 8th grades)

Methods

Students completed written assessments at 4 time points: pre and post fall implementation and pre and post Spring Implementation. 16 students were interviewed pre and post fall and post spring implementation and used to validate written assessment interpretation. Results based on matched written assessments from 260 students. Controls based on assessments of 262 demographically similar students administered at the end of the school year. Overall scores calculated based on points assigned to ranked responses. Points per category vary by number of questions & total levels in each category.

What is a Flower?

- What is a Fruit?

How are fruits and flowers from the same tree related to one another?

What do students think it means to be related?

What characteristics students use to identify street trees?

How do students notice and organize the similarities and differences amongst local tree species help students to contextualize biodiversity into an evolutionary framework?

What do students think it means to be related?

How are trees classified?

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