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Title

EDU2: CENS Pre-College Application: Supporting the Educational Pipeline

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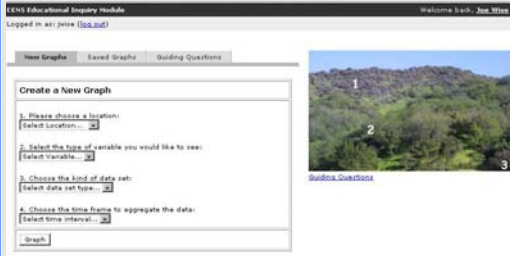
2005

Center for Embedded Networked Sensing

CENS Pre-College Application: Supporting the Educational Pipeline

M. Cook, K. Griffis, A. Harven, K. Kim, K. Millwood, W. Sandoval, V. Thadani, J. Wise, and D. Estrin

What is CENS Pre-College Application?

A reciprocal relationship between CENS technology and education

Sensing the Environment: Plant Adaptation
An interface to organize and display sensor data.

- Inquiry Modules
- Nest Box Activity
- Professional Development
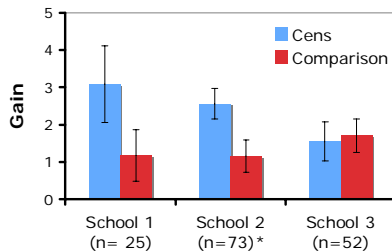- Acoustic/Imaging Application
- Educational Research

Sensing the Environment: Nest Box Visualization Tool

Field Test Results for Plant Adaptation Guided Inquiry Module

Tested in Three Local Schools

- 4 CENS teachers used our module.
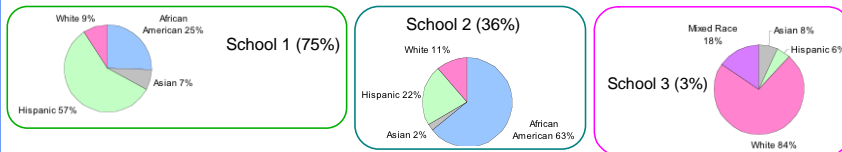- 4 comparison teachers taught the same CA standards.

Greater learning gains for CENS students

Legend: Cens / Comparison
Y-axis: Gain (0–5)
X-axis: School 1 (n= 25), School 2 (n=73)*, School 3 (n=52)

"I thought that more experiments and hands-on learning is more interesting than just reading a textbook" – CENS student

"It was interesting because I made a hypothesis and tested it out with actual data" – CENS student

School Demographics

School 1 (75%): White 9%, African American 25%, Asian 7%, Hispanic 57%

School 2 (36%): White 11%, Hispanic 22%, Asian 2%, African American 63%

School 3 (3%): Mixed Race 18%, Asian 8%, Hispanic 6%, White 84%
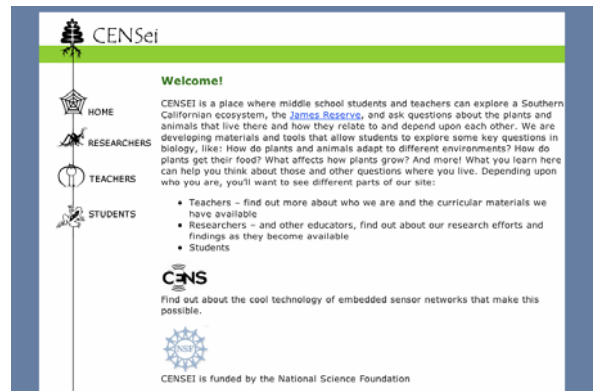
Numbers in parentheses are percentage of students receiving free or reduced lunch

CENSEI: CENS Education cyberInfrastructure (NSF ESI-0352572)

Web portal to middle school life science modules in ecology (using JR data)

- **Students** - access sequence of inquiry-based curricular modules
- **Teachers** - access to curricular materials and support
- **Researchers** - access to longitudinal performance data

Guided Module

Common Question
Shared data set
Multiple Answers

Focus on:

Interpreting, Evaluating Data

Open Module

Common Question
Multiple data sets
Multiple Answers

Add'l Foci:

Designing tests, Selecting data

Self-Directed Module

Individual Questions
Multiple data sets
Multiple Answers

Add'l Focus:

Posing testable questions

Portal rollout scheduled for August, 2005

UCLA – UCR – Caltech – USC – CSU – JPL – UC Merced