

Urban-Rural Science Experience

Overview

In June 2008, two instructors from the University of Alaska Anchorage's Liberal Studies Program, Fran Pekar and Dr. Sarah Gerken, teamed up with Talia Wiacek, a high school science teacher from the remote village of Akiachak, to coordinate a joint lab project between the 16 high school biology students in Akiachak and the 22 college students in UAA's Fall 2008 LSIS 201: Life on Earth course, a course that serves pre-elementary education majors and Bachelor of Liberal Studies majors.

Our Project

The primary instructional goal of the project was to illustrate for students the way phenotype ratios can be predicted using Mendelian genetics and Punnett squares. Students on both campuses (Anchorage and Akiachak) planted seeds of Wisconsin Fast Plants in the fall of 2008. They then recorded plant growth characteristics over the course of several weeks, logging features such as stem color, plant size, and leaf number into an online database. At the conclusion of the growing cycle, the students downloaded the plant data to Excel spreadsheets and learned how to sort and filter the data for specific characteristics, identifying the plants as having a phenotypic ratio of three purple stems to one non-purple stem. The Anchorage students then wrote papers in which they summarized their findings and proposed options for further testing of a hypothesis on the genetics of the plants.

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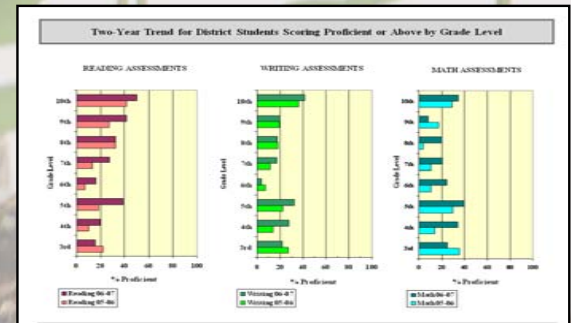
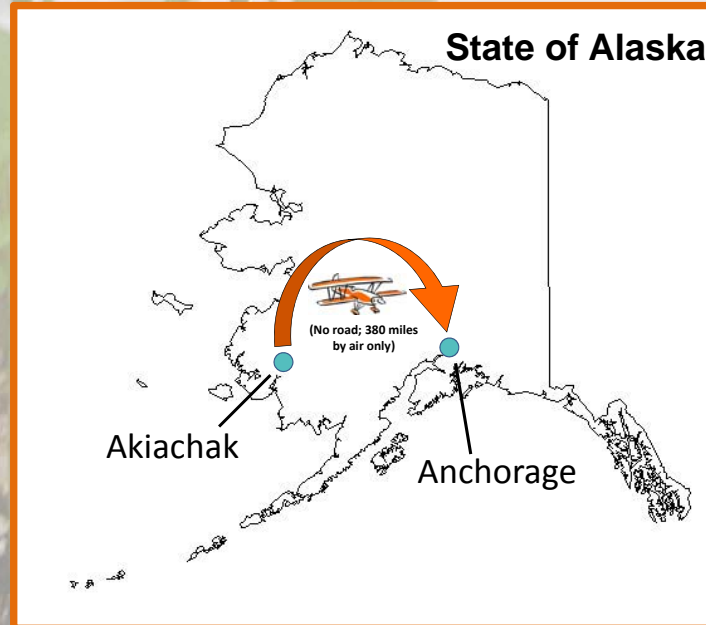
Project Goals

Instructional Goals for Students

- To experience observing the life cycle of a flowering plant
- To experience observing a flowering plant's genetic variation
- To use and review concepts of Mendelian genetics
- To practice working with qualitative and quantitative data
- To practice manipulating large volumes of data
- To learn how to use Excel, Blackboard, and DabbleDB

Goals of Partnering

- To connect students in rural and urban Alaska through a shared learning project
- To give Akiachak students an opportunity to learn about the college experience in Anchorage
- To give UAA students an opportunity to learn about the student experience in rural Alaska
- To increase the data pool for both sets of students by combining labs
- To model the use of online technologies for building community partnerships



Outcomes / Indicators of Success

Although the Akiachak plants froze near an open window one week short of their life cycle, students were still able to submit several weeks of good data from those plants, which, combined with the data from the Anchorage students, supplied enough information for the project to fulfill its instructional goals.

The goals related to partnering also appear to have been met by the project's format. Both Blackboard and an online database were used to connect the two sets of students, and from this connection, all the students were able to log in to the database and add their observations. As the semester neared its end, a discussion board allowed students to interact between campuses. The discussion board featured threads on rural life, Anchorage life, school life, and technology availability. While initially the Anchorage students were somewhat slow to participate, the discussion board eventually took off, and some valuable interchange occurred. Post-survey results from the Anchorage students indicate that more than half the students in the class were interested in and monitored the discussion. Pre-survey and post-survey results from the Anchorage students also indicate that roughly 9 of the 22 students plan to apply for teaching positions in rural Alaska after graduation. Four of those 9 students have lived in rural Alaska at some point in time.



Project Partner - Akiachak

Akiachak School is located in the Yup'ik Eskimo village of Akiachak, a village of roughly 700 people situated on the banks of the Kuskokwim River in southwestern Alaska. The Yup'ik School District headquarters operate out of Akiachak and provide employment for a number of community members, in addition to seasonal industries, such as fishing. Only one third of the community has access to indoor plumbing, and transportation in and around the area is confined to boat, plane, ATV, or snow-machining on frozen rivers. Akiachak school is a Title 1, Level 5 school. Adequate yearly progress was met in 2006-2007. (Yup'ik School District)

