

An Innovation Odyssey

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In 1803, Lewis and Clark led a team to explore the unknown territory now called the American West. They navigated by the stars, created maps, discovered new species of plants and animals, and wrote detailed journals about their epic journey. Today, students are retracing their steps, using modern technology and interdisciplinary learning to take a fresh look at the lessons of history.

The 21st Century Spin

day 291



Students rediscover adventure along the Lewis and Clark Trail

- Grades: 10-12
- Lincoln High School
- Interdisciplinary
- Technologies: Web, high-definition TV, measurement devices



DALLAS, Texas—When eight inner-city high school students set out to explore a section of the Lewis and Clark Trail that runs through rural Montana, they weren't sure quite what they were getting themselves into. By the time they returned home, they had learned to drive a snowmobile and ride a horse. They had used technology to carbon-date bone fragments, analyze the quality of hot springs water, and build a Web site about their experiences. They came face-to-face with characters right out of another century.

Just like members of the original Corps of Discovery, they also learned to trust their teammates. Perhaps most important, according to one of the teachers who planned the adventure, "these students develop a higher sense of courage. They prove to themselves that they can succeed, no matter what barriers stand in their way."

Darren Carollo and Shirley Pickton are the two teachers from Lincoln High School in Dallas who have made a tradition of organizing an annual event designed to change young lives. During the regular school day, Carollo teaches physics and biology. Pickton, the school's gifted and talented education coordinator, teaches Advanced Placement (AP) art history and pre-AP English, and advises the Academic Decathlon. After the regular school day ends, they shift gears to orchestrate this unique experiential learning experience that also seamlessly incorporates technology.

Planning begins in the fall when the teachers develop an idea for an adventure and write grants that allow it to happen. In past years, they have taken students to Alaska to explore the frozen world of glaciers, navigating by everything from fishing boat to helicopter. They have immersed students in the world of aeronautical engineering, having them build replicas of Boeing commercial airliners in their physics lab and conducting hands-on visits to Boeing's facility in Everett, Washington. Their students have learned about endangered wildlife by working alongside scientists at the San Diego Zoo.

Students have to compete for a spot on this dream team. Applicants must show their willingness to stick with a challenge by competing in the Academic Decathlon, a national competition that cuts across many disciplines. They have to write an essay and submit to interviews.

Once selected, they complete a month-long preparation period that involves meeting daily deadlines. This year, for instance, students tackled specific tasks relating to cartography, meteorology, botany, wildlife biology, and other topics relating to Lewis and Clark history. Missing an



Snowmobiling was a new experience for the whole team.

Most students grow in maturity during the experience, although Carollo suspects it may take years for the full benefits to be revealed. Intentionally, the teachers don't gear this program for students who are already thriving in high school. "We're looking to make a difference," he says. "We want students whose outlook will be changed for the future." What outlook is he aiming for? "We want to create students who can go into a foreign environment and thrive there—global students."

For teenagers from an urban high school serving nearly all African American students, many growing up in poverty, much feels "foreign" about this all-expenses-paid learning adventure. None of this year's crew had ridden a horse or driven a snowmobile before they headed to Montana. Few could have imagined that there were still places where you don't see a house, or a trace of human habitation, for dozens of miles. Never before had they ventured out in public wearing matching leather jackets and cowboy hats.

Already, Pickton says, she has seen students changed by the experience. "I see a hunger to learn more, an eagerness to ask the hard questions."

Both teachers are veterans of the Intel® Teach to the Future program, which they credit with helping them look for new ways to integrate

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assignment can get you tossed off the team and replaced by an eager substitute. One year, the teachers had to replace all eight original picks. "Our standards are high," Carollo admits. "We can't allow them not to complete tasks, or they risk letting down the whole team." At the same time, he makes sure to let students take the lead when it comes to divvying up tasks and figuring out how to get things done.

Pickton takes pride in building surprises into the learning experience. Will there be food waiting at the end of a long day, or will students be expected to fend for themselves? Will they be able to crawl into a warm bed or face setting up a shelter under the stars? "They tell me I'm full of surprises," she says, but there's a method to her approach. "Out in the wilderness, students learn to think ahead."



Students return from their experience with a new outlook about the future.

technology into learning. Pickton started teaching 28 years ago, and Carollo switched to the profession almost seven years ago after an earlier career in the business world. Their successful partnership has been possible, they suspect, because of a shared sense of values and a willingness to be flexible. "And we're both risk-takers," Pickton adds with a laugh.

Thanks to a documentary crew that came along for the whole adventure, the experience in Montana was captured in high-definition TV for future broadcast. The students are also creating their own Web site to share what they have learned about the Lewis and Clark story. Their version of history will have a decidedly 21st-century spin, with modern technologies enriching the learning opportunities and video clips capturing the thrill of a lifetime.

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