Digging to Learn: Teaching Science, History, and Social Studies Through Archaeology

As Logan County, West Virginia, high school students uncovered an ancient culture under their front lawn, an enthusiastic teacher led them to understand the rigor and discipline of historical research.

Ron Moxley is an inspired teacher who dares to be different. In a single project, he opened up before his students, other teachers, and the community the excitement of original inquiry and the skills of scientific method. Moxley, you see, is an amateur archaeologist, and whenever he has a few spare moments from his high school coaching and teaching jobs, he searches for likely sites of lost Indian villages.

The campus of Man High School in the West Virginia coalfields where Rockhouse Creek joins the Guyandotte River seemed like a good prospect for a dig. This tiny valley among the rugged mountains would have been a logical resting spot for travelers, and it would have been well suited for hunting in several directions and for farming on its rich riverbottom meadows. Moxley already knew something about the valley. Years before, when the field across the street from the high school had been excavated for the Appalachian Regional Hospital, Moxley was there.

He methodically surveyed the site. On a two-meter grid, he carefully plotted the subsurface traces of an ancient community. He patiently identified the patterns of post molds and cooking hearths. He noted the types and quantities of refuse in the trash pits and kitchen middens. He described the numerous graves, and he published his findings in an archaeological journal. Now he was ready to explore further.

The Logan County Board of Education hesitated when Moxley proposed...
Ron Moxley, high school teacher and amateur archaeologist, made students and community members part of the dig. He shared findings with onlookers, explained as he and students worked, and set up exhibits of recently excavated artifacts.

to dig up the front lawn of the high school, but the idea of a unique learning experience appealed to the school trustees. They gladly endorsed the project when he promised no time would be lost from regular classes. And when Moxley said there would be no out-of-pocket cost to the board, their enthusiasm caught fire.

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Thus it was that high school students, used to taking their West Virginia studies from a dry textbook, began to examine the evidence under their very feet. Almost with the first test probe, they hit pay dirt. Working within an area of darkened soil inside a rectangular pattern of post molds, two students unearthed a complete skeleton in flexed position. They found an arrowhead of sugar-quartz stone in the body cavity, a type uncommon to the area. They speculated that the point might have come from a raiding party traveling inland from the eastern coastal regions.

By bits and pieces, the young diggers began to reconstruct a pattern of community life in another culture and time. The features and artifacts associated the site with the Woodside phase of the Fort Ancient culture, which dated between 1400 and 1600. Charcoal samples from at least one earthen oven, however, suggested that the site had been occupied as early as 800 A.D.

Tools and ornaments excavated at Man High School had been fashioned from the bones of animals that have all but vanished from the area—deer, black bear, elk, raccoon, turkey, beaver, and wolf. On the other hand, no bones from rabbits or opossums, the most common present-day wild animals, turned up in the Indian trash pits. The students considered the problem. Rabbits and opossum thrive in dense undergrowth, and very little brush existed before the lumber industry removed the tall trees from the
valley. Perhaps this was indirect testimony of the ecological changes that came with the white man.

All of this may be read about in the detailed archaeological reports that Moxley and his students wrote for publication, but our interest here is the dig itself and how the young teacher organized it as a special learning experience his students will never forget.

A Learning Experience for All to Share

Early on, the affair caught the popular imagination. Local business firms contributed supplies and materials. Townspeople who usually came to the high school only for ball games pitched in to dig beside the students. The enthusiasm of Moxley’s class drew other students into the work. The board of education provided some school buses, and by the time the grass had been reseeded over two separate excavations, more than 700 students from 4 high schools had participated in the project.

Reporters had a field day. A newspaper in the state capital editorialized about students digging into history in Logan County. "Just when it seems education is past rescue, strangled by bureaucracy, there come glimmers of how lively it can be when everybody does the right thing. Bully for Moxley. Bully for the Board of Education, too. It had a chance to offer its students a vision of the future a restructured science curriculum.

Educators, concerned scientists, and managers from government and industry are urged to participate.

At the dig, the students worked hard and long. The enthusiasm of Moxley’s class was infectious. Teachers worked side by side with their students, and everyone, including the principal, was a part of the team, and one and all engaged in the excitement of discovery. The students were given the opportunity to observe and participate in the ongoing speculations and evaluations as new features came to light. They taught while they worked.

That could have been a palisade,” Moxley said, pointing toward a line of slender sticks marking a series of post molds. “This house was built after the palisade. See where the pattern interrupts the line—here, and again here? This hearth was probably associated with the house.” As Moxley spoke, with the easy confidence of a master teacher who enjoyed his work, he began probing the sandy floor of a pit. "We think we have a grave here,” he said to several dozen onlookers. "They often buried their people within the houses.” His trowel struck something solid, and he carefully exposed a bone. "This looks like a left tibia. Yes. And here is the femur. This is an extended burial. That is a sign that this person is important. Some artifacts may have been buried with the body. We usually find them in the left hand—which should be about here.”

The probe struck something hard, and he began working around the object with a trowel. A finely polished stone came to view. "This looks like a ceremonial axe,” he said. "Bring the camera.”

An Unforgettable Adventure

Attendance set new records at Man High School during the dig. But the student lounge was vacant, and the study halls were empty. Why should anyone waste time when exciting things were happening right outside the windows? One classroom teacher marveled that her students were more alert and eager to learn than usual. When they first opened their books to study the skeletal system, everyone correctly identified the tibia, the patella, the femur, and other major bones. "That has never happened before,” she said.

But Ron Moxley was not surprised. He knew that the means to begin the adventure of learning were often close at hand and waiting to be used by an inspired teacher. And Ron Moxley had seen what people could do when someone fires their imagination. [B]

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