

CASE STUDY: NORTH DAKOTA CENTER FOR
DISTANCE EDUCATION

EQUAL ACCESS TO QUALITY
PROJECT-BASED LEARNING
FOR RURAL STUDENTS



Nationally, nearly 9 million students attend rural schools, which is more than the number of students in New York City, Chicago, Los Angeles, and the next 75 largest school districts combined.

For many rural students, STEM courses are not a matter of choice, but a matter of access. In fact, District Administration reports that roughly 20% of students in the United States live in rural school districts where access to STEM resources are harder to come by because of funding issues, technology gaps, lack of nearby resources, cultural challenges, and STEM teacher shortages.

Schools in North Dakota, where close to 40% of students attend public schools in rural areas, often turn to the North Dakota Center for Distance Education (NDCDE), a state agency that provides blended and online learning opportunities that respond to student learning needs.

“A lot of schools partner with us to provide supplementary services,” said Dr. Matthew Lonn, NDCDE Interim Director. “In North Dakota, it’s fairly common for a school in a rural community to experience teacher shortages in certain subjects, especially in math, science, or electives. In those instances, we work to form a partnership with those schools. Students can then enroll in our online courses that include an instructor, curriculum, and delivery.”

Today, NDCDE has a catalog of more than 300 online courses to give students equal access to a variety of subjects. “Now schools have the opportunity to give choice to their students. A rural school that has 10 students in a graduating class can now offer the same electives as schools in larger districts with more resources.”

MOVING FORWARD WITH A STUDENT-CENTERED APPROACH

With students in just about every school district in the state taking online courses from NDCDE, Dr. Lonn and his team wanted to address the needs of students in the classroom.

Once again, project-based learning emerged as the way for schools to help their students be better prepared for the workforce.

“We attended several educational conferences over the years, and there is always a strong message around the need to create an environment where students can take greater control of their learning. In addition to that, you’re trying to teach students soft skills.” said Dr. Lonn. “I don’t think there’s a superintendent or principal in the state who wouldn’t agree that those are great things to strive for. What kept coming back to us was how do we, as a state agency, help schools actually implement a project-based learning environment—regardless of their location.”

WEIGHING OPTIONS TO FIND THE RIGHT PARTNER

To create the framework for schools across the state, NDCDE knew it needed to find more than just a curriculum partner to be successful. “We wanted to make it easy for schools, especially small rural ones, to shift their methodology and pedagogy to be more student-centered, project-based, and hands-on,” he explains.

So Dr. Lonn and his team explored options, but only found programs that addressed a particular interest—not the whole student population.

The team also explored makerspaces and, although they thought the space provided an environment to explore STEM subjects

HOW DO WE HELP SCHOOLS IMPLEMENT A PROJECT-BASED LEARNING ENVIRONMENT



and topics, it also meant teachers had to develop the curriculum around the content.

“In an environment where teacher turnover rates are typically very high, makerspaces didn’t seem like a sustainable option for North Dakota,” said Dr. Lonn.

After learning about SmartLab Learning, the team at NDCDE traveled to several SmartLab HQs across the country. NDCDE quickly learned that a SmartLab HQ wasn’t just for one type of student population, and it wasn’t just about STEM curriculum.

“After we saw the excitement from the students, and the actual test scores increasing as a result of a SmartLab Learning program, we knew we wanted to invest in one for our location. It was a program for every student in the building.”

Although SmartLab Learning is sometimes described as STEM-focused, it blends curricular content from all core areas. This turnkey approach helps bring learning opportunities that focus on problem-solving skills, critical thinking, collaboration, creativity, and design principles to students of all abilities.

Through the partnership with SmartLab Learning, NDCDE is able to design SmartLab Learning programs that are customized for North Dakota schools, regardless of their size. “We actually install

the SmartLab Learning program and provide training for facilitators in schools all across the state,” said Dr. Lonn.

In addition to the student-centered curriculum, each North Dakota SmartLab HQ contains all-in-one computers (one per two students), additional hardware, software, and fully assembled learning kits that are needed for a successful implementation.

EXPANDING THE PROGRAM MADE SMARTLABS EVEN MORE ACCESSIBLE

NDCDE now has 18 SmartLab HQ programs in the state—where none existed 3 years ago.

By partnering with SmartLab Learning, NDCDE is able to offer turnkey solutions at a lower cost so that every school across the state can not only experience a SmartLab, but fund one as well.

Dr. Lonn explains, “We are now able to provide the installation, curriculum, training, and technical support to drive costs down for the districts. This allows us to provide rural schools—regardless of student population size—a fully functioning SmartLab HQ.”

NDCDE also provides many other benefits to schools that want to implement a SmartLab HQ. “We’ve worked with enough schools now that we know which grants—federal, state, career in technology—are available for small rural schools,” said Dr. Lonn.

40%

Of students in North Dakota attend public schools in rural areas.

300

Online courses from the NDCDE catalog give choice to North Dakota students.

18

SmartLab programs can be found in North Dakota where none existed 3 years ago.

CHALLENGES FACING RURAL SCHOOLS

- Overall, rural students are less likely to hold a college degree than students in metropolitan areas, 51% to 62% respectively.
- School choice is not a viable option in rural districts, only 11% of charter schools are rural compared to 56% that are located in city districts.
- More than two-thirds of Americans who lack access to the internet live in rural communities.

Department of Agriculture, 2017, McFarland et al, 2017, Microsoft, 2017



The schools have also established relationships with a loan provider that specializes in providing loans to schools and local organizations to help provide funding for schools that are ready to implement a new SmartLab HQ.

“Our goal is to try to make it as painless as possible to implement a SmartLab HQ by giving schools options to fund the program. For many schools with a SmartLab, it has become a centerpiece for the community. In many instances, the room has become a 21st-century model of education in buildings that are sometimes nearly 100 years old,” said Dr. Lonn.

SETTING THE GOAL TO GET A SMARTLAB IN EVERY DISTRICT

When NDCDE started this project more than 4 years ago, the goal was to put a SmartLab in every district in the state.

“I don’t know if we’ll ever get there, but I think we have a lot of interest now from many districts and educational organizations in North Dakota,” said Dr. Lonn.

The main reason for this is the effort the SmartLab Learning team and NDCDE put toward creating a sustainable program for rural schools.

“We don’t just drop into a small town and go away. A SmartLab HQ is designed to grow with our schools and will continue to improve and adapt as technology changes. Really, it never becomes a static program,” he explains.

Dr. Lonn and his team’s relentless focus on student learning is aided with the strong partnership with the SmartLab Learning team.

“Everything we do focuses around student learning. When we’re able to partner with providers who have that same focus, we tend to get better results as well. And I think we found a life partner in the SmartLab Learning team.”

