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Case Study:
Nebraska Natural Resources Districts

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About Nebraska Natural Resources Districts

Nebraska Natural Resources Districts (NRDs), established in 1972, is a group of local government units working together to conserve and protect the state's natural resources. Today, 23 districts are organised based on Nebraska's major river basins so that each can respond to the needs of the local environment. Elected boards of directors govern each district and are funded primarily by local property taxes.

NRDs are charged under state law with twelve areas of responsibility including flood control, soil erosion, groundwater management and many others. To respond to natural resource challenges, the districts are involved in a variety of projects and programmes, often building partnerships with other agencies and organisations.

In addition, NRDs run educational programs for youth and adults to educate them about conservation and natural resources. This involves natural resources festivals, teacher workshops, classroom presentations, competitions, camps and more.

Motivation & planning

In response to COVID, NRDs started offering online resources such as 'Virtual Classrooms' with collections of resources for schools and families. They also moved some in-person events online, such as their annual Envirothon competition hosted alongside the National Conservation Fund (NCF).

The NCF Envirothon is a competition held in July or August every year that allows high school students to showcase their environmental knowledge and compete for scholarships. In teams of five, students compete in five areas of environmental studies: soil, aquatics, forestry, wildlife and current issues. Usually, the competition is held in the field with students completing tasks such as identifying different species of plants and animals, looking at soil samples and testing water quality.

Nebraska Association of Resources Districts (NARD) represent the 23 districts and coordinate the NCF Envirothon. In 2021, NARD decided to host the competition online due to public health restrictions. There were 41 teams from 34 US states, 4 Canadian provinces and China and so it was necessary to go digital so that everyone could attend the competition. The format was adapted for the virtual environment with text and visual resources replacing fieldwork. When deciding on a digital platform to host the competition, the following two features were particularly important:

1   The possibility for every team to complete their test within a certain window of time, allowing for students in different time zones to participate.

2   Being able to monitor students with proctoring tools and disable the use of other applications or web browsers to uphold the integrity of the programme.

The research and planning process was completed quickly due to the time constraints on the project. **Jennifer Swanson**, NRD/NDEE Liaison at NARD, worked together with a small group made up of Public Relations Director, Programmes and Partnerships Director, and Office Manager with input from the Executive Director. In Spring 2021 Jennifer began by researching different platforms and setting up consultations with suppliers.

Jennifer Swanson

NRD/NDEE Liaison, Nebraska Natural Resources Districts

After this, the group spent approximately two weeks attending product demonstrations and evaluating the platforms. At this point, in April 2021, NARD decided to work with Inspera based on the features outlined above as well as usability in the backend of the platform. They decided to use Inspera Assessment, Inspera Exam Portal and Inspera Smarter Proctoring to meet their needs.

Implementation

With a short amount of time to get up and running, staff at NARD and Inspera worked quickly to implement the platform and create assessments for the competition. From late May through to early June 2021, Inspera's consultants worked with Jennifer Swanson to find solutions for the competition's unique logistical needs. She says:

> *[Inspera] were very efficient and exceeded our expectations of when things would be ready to start developing the tests in the platform,"* and that *"everyone did a wonderful job answering our questions and so we felt confident in the decision we made."*

Jennifer Swanson

Firstly, it was important to consider that competition teams were located across time zones and so everyone couldn't complete the test simultaneously. The solution to this was to have a testing window of 8 am to 8 pm Central Standard Time in which teams were given five different tests with an hour to complete each.

Secondly, the project group needed to ensure that security solutions were suitable both for upholding the integrity of the competition and enabling the required flexibility for teams competing in different locations. Proctoring was used primarily as a deterrent for dishonesty during the competition although staff did have the option to review recordings afterwards if necessary. Using a lockdown browser was also important because it prevented students from looking up answers to questions during the test.

The majority of teams met in person and worked together, creating one submission per team. However, due to local restrictions, some teams had to collaborate remotely and so it was necessary to create a few different instances of the test. A few teams were unable to meet in person which meant that they needed to use Zoom to communicate and screen-share during the competition and therefore could not use a full lockdown browser.

Another variation of the test was created for a visually impaired student who required a larger font size which enabled them to read the questions themselves rather than having to rely on teammates to read for them.

Stephanie Tolar, NCF-Envirothon Education Specialist, worked to author the test questions. She spent about a week authoring five different tests, covering each section of the competition, as well as the variants mentioned above and some demonstration tests. The tests involved scenario questions based on environmental problems outlined in a stimulus text and identification questions with pictures of flora and fauna. If more time had been available, the project group would have liked to have included a wider range of test stimulus material such as videos of the natural environment in the area. NRDs made use of a wide range of question types available in Inspera Assessment: Jennifer says, "We really enjoyed the options we had of the variety of test questions we could ask. Between matching, short answers, multiple-choice and fill in the blank, we had the options there that gave us the flexibility we needed."

A week before the competition, in July 2021, NCF sent out an email with instructions to the captain of each team. This included a demo test so that they could familiarise themselves with the platform, with a recommendation to download and test Inspera's software on multiple devices in case of technical difficulties during the test.

On the day of the competition, support was provided by a Competition Advisory Team (CAT) at the NARD office and each CAT member was given several teams to oversee. At the start of the competition, the team captain checked in with their CAT member and could do so again during the test if they had any issues. The CAT member would then report back to Jennifer who would try to solve the problem. If she was unable to do so, she would submit a helpdesk ticket to Inspera which was picked up by NRDs' Implementation Consultant. Jennifer says, "*they helped around the clock which I was very thankful for.*"

Outcomes & reflections

The virtual competition ran successfully in late July 2021. Jennifer says, "our goal was to have everyone get their test submitted within that 12-hour window that we gave them and that we accomplished. So we were happy with that." Although Inspera's platforms were new to the students, they encountered very few issues because the interface was easy to use. Part of this is due to Inspera's digital resilience which allowed students with poor internet connectivity to continue working: "another benefit of Inspera is that if you lost internet access, you were still able to take the test," Jennifer notes.

Jennifer also says that there were some advantages to hosting the competition virtually. Notably, there were savings in time and resources because it wasn't necessary to arrange accommodation, food, transportation and other logistical necessities. It was also more convenient for students because they didn't need to travel to the competition. Afterwards, NCF ran a survey to ask students' opinions on the competition. In response to the question 'overall how well did the virtual Envirothon meet your expectations?', **98% of students** answered *'met expectations'* or *'exceeded expectations'*.

This came at the cost, of course, of not being able to get students out into the field. However, Jennifer says, "*it's great fun being able to get the kids out in the natural environment. We weren't able to do that but your platform did a great job doing what we needed it to do.*"
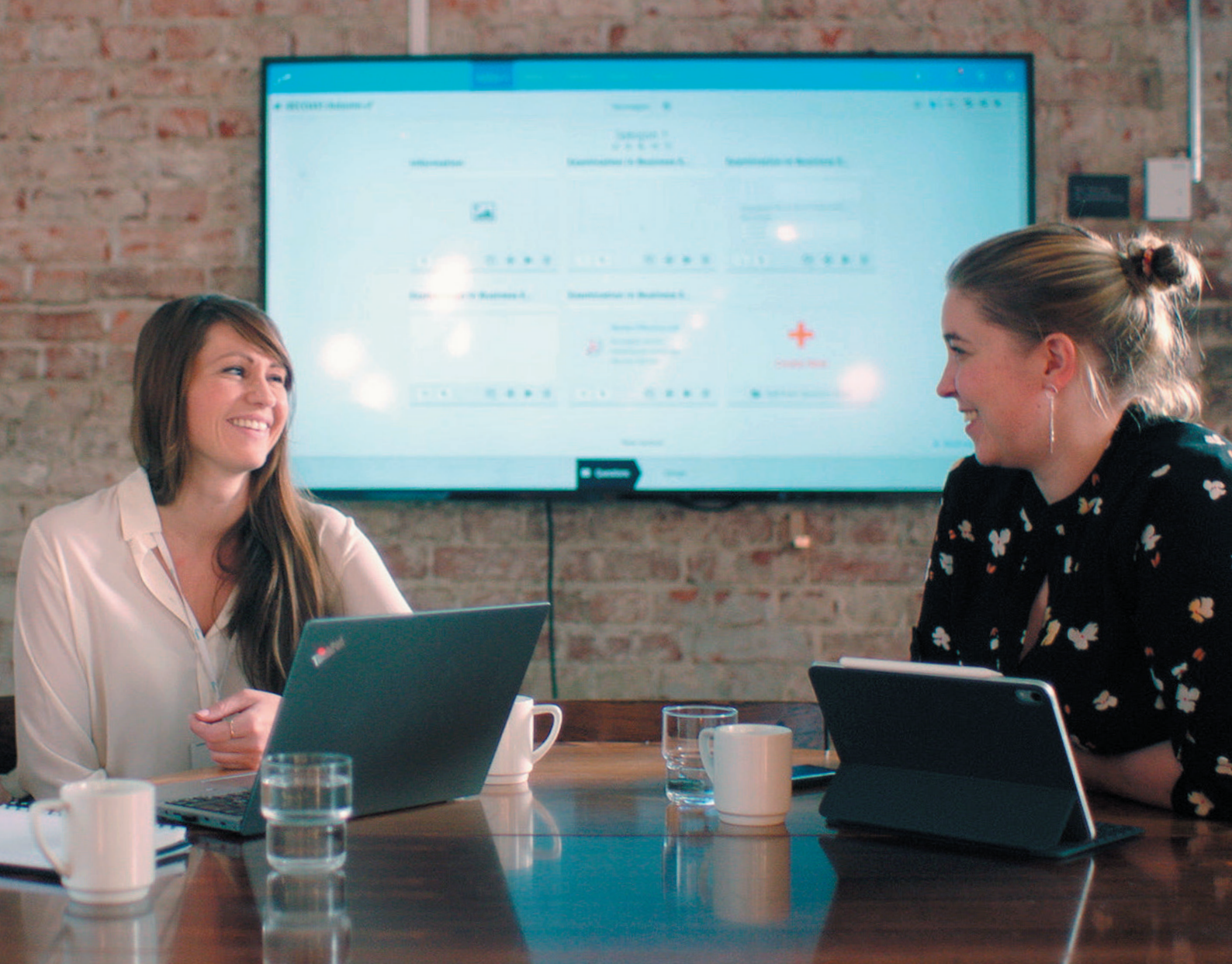
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