

## Developing a Mobile Extension Course for Youth Livestock Producers

### Abstract

The 4-H Livestock Quality Assurance course is a mobile Extension course for youth and youth leaders. In 3 years of implementation, over 6,600 participants from 16 states have learned about good production practices for animal agriculture through the innovative online Nebraska Livestock Quality Assurance course. By evaluating the needs of our youth and capitalizing upon content area experts from across the state, we are able to provide the best content to all youth, 24X7.

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### Introduction

In 1999, Nebraska developed a multi-species curriculum designed to teach youth how to produce a safe and healthy consumable food product. This was in response to livestock production organizations establishing quality assurance programs for adults (Fassett, Nold, & Rockwell, 2005; Nold & Hanson, 2001). The curriculum was designed to be offered by county Extension staff annually in a face-to-face manner, using a 3-year content rotation and incorporating hands-on activities and interactive discussions (Nold & Hanson, 2001).

Research conducted on the curriculum indicated a need for change (Dam, 2005; Hansen, 2008). Evaluation of the program implementation from the parents' perspective indicated younger youth were being taught advanced topics and practices, while older youth reported being bored with content due to the adolescent target age range and the duplication of materials every 3 years (Dam, 2005). Additionally, materials were being delivered using a variety of methods, including a standard PowerPoint (Dam, 2005), or check-out materials followed by hands-on activities, if time permitted. Since content was on a 3-year rotation, little species-specific information was incorporated into the content (Dam, 2005). Additionally, the Nebraska Quality Assurance program grew to incorporate both poultry and rabbits, while the content of the Quality Assurance curriculum remained unchanged, leaving small animal youth underserved. And finally, not all Nebraska counties have livestock-focused Extension staff, requiring youth to travel excessively or participate in lesser quality programming.

## Program Overview

In 2011, the Nebraska 4-H Livestock Quality Assurance program underwent a major change. The content was converted to online modules, complete with videos, games, learning activities, and hands-on activities. Since the course follows a flipped classroom model, hands-on activities are incorporated in the online course for youth to practice what they have learned with their livestock Extension educator, livestock project leader, teacher, or parent. In 3 years of implementation, over 6,600 participants from 16 states have learned about good production practices for animal agriculture through the innovative online Nebraska Livestock Quality Assurance course.

## Mobile Online Extension

While simply going online with content would address many of the issues we were experiencing with the existing Livestock Quality Assurance program, addressing issues of a mobile audience also were pivotal in determining the specific tools for delivery of content. Since youth audiences may be participating in the course with personal devices, or devices at public locations, a decision was made to go with a mobile Web content management system. This provided us the least dependency upon a specific platform and the broadest scope of youth access using both private and public technology resources.

While mobile applications reduce concerns over the platform, youth needed Internet access to complete the course. Statistics indicate that 86% of Nebraska households currently have Internet access, and 82% of Nebraska households have broadband access (Nebraska Broadband, 2014). While Internet connectivity challenges in the majority of households was not a problem, Internet connectivity problems did still occur in the very rural populations, which also lacked access to face-to-face opportunities. However, even within these rural populations, household Internet access changed from 62% in 2010 to 75% in 2014 (Nebraska Broadband, 2014).

## Designing Content for Mobile Delivery

A considerable amount of thought was given to the content development of the mobile Extension course for youth livestock producers. The 10 Good Production Practices established by the National Pork Board were reviewed for potential content and divided into three developmentally appropriate age divisions. Content was also broken into small management modules, which youth could complete within 20 minutes or less. Course instructors were required to develop content and to deliver the same content using two or more learning preferences, e.g., reading and watching a video, or reading and participating in a game. Youth access the best content experts within each area through online delivery.

## Course Management and Youth Engagement

### Interaction

This online course is not interactive. Considering the age of our youth participants, online interaction and discussion boards were removed to protect the youth audience, as suggested by the Children

Online Privacy Protection Act (Federal Trade Commission, 2012).

## Personalization

Each individual participant has their own course account, which allows the course to keep grades over the youth's 4-H and/or FFA career and for the course to automatically personalize all certificates earned. As a certificate is associated with each module, youth have immediate celebration of passing scores (80% or better). Review of certificates and scores indicates that even youth with a passing score will repeat the quiz in order to attain a 100% on their certificate. Module completions are reported to their county, but only on a pass basis. Actual scores are only reported on their certificates and within their personal course grade book.

Account personalization requires a unique email address. Implementing a +1 feature allows parents to develop a unique email address for each of their children, while maintaining access to only one email account. This system does not work for some email providers; however, it does work with many of the free email account providers, such as Hotmail and Gmail.

Personalization in turn encourages engagement. Statistics on Stanford, MIT, and UC Berkley massive online open courses (MOOC) indicates an 80-95% drop out rate (Yuan, Powell, & Cetis, 2013). Over 93% of youth complete the Livestock Quality Assurance course minimum requirement and 28% complete at least twice as many modules as required.

## Quiz Access

Youth have unlimited access to quizzes. Since all quizzes are the result of a random selection of questions and responses, youth do not have to wait to retake quizzes. They can immediately review their grade, and if they do not like the results, make the choice to either review the material or repeat the quiz. The course does not provide the correct answers to quiz questions, thereby encouraging participants to review the module content.

## Responsiveness to Participant Questions

Participants are completing requirements when it is convenient to them, therefore questions about the course, registration etc., may need to be addressed on evenings and weekends.

## Content Review Process

The course is currently undergoing an extensive research study to determine the degree to which the online course 1) impacts youth behavior, 2) reaches all demographic audiences, 3) compares to knowledge gained within face-to-face livestock quality assurance courses, and 4) informs the pedagogy of online youth curriculum. Individual modules are peer reviewed prior to posting the content online, and course content is annually reviewed for additional module development and existing module redesign due to change in content, course instructors, or available technologies. Course innovation is fed through a continuous improvement process.

## Would We Do It Again?

Absolutely! It hasn't been easy, but it's an innovative delivery strategy for Extension programming that truly addresses a need of our youth audience and busy parents.

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