

A Learner-centered Design of a Poultry Production and Marketing Website

Olivier Ntaganzwa
Purdue University
Department of Agricultural Sciences Education and Communication
Lilly Hall, Room 4-401
915 Mitch Daniels Blvd.
West Lafayette, IN 47907
ontaganz@purdue.edu

Neil A. Knobloch, Ph.D.
Purdue University
Department of Agricultural Sciences Education and Communication
Lilly Hall, Room 3-232
915 Mitch Daniels Blvd.
West Lafayette, IN 47907
nknobloc@purdue.edu

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Introduction and Need for Strategy

The poultry industry is one of Rwanda's most promising investment opportunities for farmers and businesspeople, with figures indicating a financial rate of return ranging between 19% and 53% (Miklyaev et al., 2017). Other opportunities include demand that far exceeds supply, availability of labor, tax exemption for and investment opportunities in meat harvesting, processing, packaging, and export to neighboring countries (Netherlands Enterprise Agency, 2016). One of the policies proposed to develop Rwanda's agriculture sector is to make extension services more demand-driven (RAB, 2018). Due to the high demand in the poultry sector, chicken marketing modules were produced in the past to train extension agents, and some are available online, but finding a comprehensive guide for beginning poultry producers on raising, feeding, housing, and marketing chickens remains a challenging endeavor. To address that need, the Chickens 4 Rwanda educational website was developed to provide extension agents with ready-to-use modules they may use to teach farmers how to start and sustain their small-scale poultry projects. The modules offer relevant examples to empower extension agents to provide contextualized knowledge to new chicken farmers. Additionally, the website features worksheets, marketing plans, and tables for making budgets.

Implementation of Strategy and Results

One of the main tenets of learner-centered teaching is that it “emphasizes students’ needs and interests” (Tunali, 2020, p. 157). To make the case for the learner-centeredness of the website, we highlight how its content is tailored to the needs of poultry extension agents and chicken farmers.

Extension agents: The website content was intended to allow poultry extension agents in Rwanda to access online educational resources and utilize them as independent learners (Al Mamun, 2020). Its pages were designed using Wixsite, a platform that provides free templates and free assistance in building websites. The website features four sections: Home, About, Modules, and Resources. While the Modules section contains four modules on the raising, feeding, and marketing of chickens, the Resources section features curriculum resources, external videos, scientific articles, and some previously published reports about poultry in Rwanda. For each module, users are prompted to click a button to access the corresponding material hosted on an external Google Docs folder or click on a button marked “Get worksheet” to access the worksheet associated with the module. They can view and download the material as needed. The same process applies to the Resources section, where users can find curriculum materials in both English and Kinyarwanda, peer-reviewed research papers, and reports on poultry in Rwanda. Additionally, each module contains references for pictures, reports, and website content about chickens. Those references and resources are provided out of the belief that using multiple documents leads to more content knowledge (Nokes et al., 2007).

The four modules developed can be freely accessed, utilized, and downloaded from the Chickens 4 Rwanda website (<https://olintag.wixsite.com/chickens-4-rwanda>). There are plans to

periodically add more resources and adapt the website design and content to the feedback sent by extension agents to the website creator's email address.

Chicken farmers: Centering a learning experience for chicken farmers starts with knowing who they are, how they live and work, and what they want (Klipfel & Cook, 2020). That is why a needs assessment was conducted to determine the kind of information and knowledge poultry farmers needed. A purposive sample of 44 chicken farmers participated in the study. Results from the needs assessment indicate that 61.4% of the participants identified as male and 38.6% as female; their educational background varied between primary school (61.5%), secondary school (18.6%), and college/university (2.3%). Participants had between one and 20 chickens. Data shows that participants raise chickens to get eggs and meat for their families and sell some of those products for money. All of them market their chicken products to local business partners. Concerning the sources of information they use, most participants cited radio, village meetings, and television; only one person mentioned the Internet. Extension agents (100%), local leaders (86.4%), and non-governmental organizations (84.1%) were identified as their main sources of information about chickens. Participants declared using all those sources to learn more about (1) the farmers' daily activities, (2) the housing of chickens, (3) improved breeds, (4) and market prices.

The results from the needs assessment informed the content of the modules: Module 1 features a video that introduces the topics covered in Modules 2, 3, and 4. Module 2 explores the different breeds of chickens found in Rwanda, the pros and cons of different kinds of chicken housing, and how a farmer can build their own chicken house. Module 3 discusses how to raise day-old chicks in their first 14 days, and Module 4 dives into the marketing and financial aspects of a chicken business. Because the modules target adult learners, they were designed to appeal to their lived experiences and motivate them to participate in their learning (Talbert et al., 2022). For example, throughout the modules, the learner is invited to answer questions that relate to their day-to-day experiences as farmers, such as "We've already established the resilience of the Sasso chicken. What does that suggest in terms of housing?" in Module 2, or "In your opinion, what constitutes a chicken's balanced diet?" in Module 3. The prompts and the questions are included in worksheets associated with all four modules.

Implications and Advice to Others

The primary targeted users of these modules are the poultry extension agents in Rwanda. They may utilize them to provide initial knowledge to farmers who wish to start raising chickens for financial profit, and young Rwandans interested in joining the poultry industry. The modules can also be accessed by poultry farmers, educators, students, and aspiring businesspersons.

Conducting a needs assessment helped shape a learner-centered approach to extension efforts. When trying to reach the participants for a needs assessment study, educators should enlist the help of local extension agents. Because they are already known in the community, local extension agents can encourage people to turn up at the venue and to feel comfortable with the data collection process. They can also help the researcher understand the local context of the area under research.

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