A Curriculum Development Blueprint:
Building Cohesive Federally Funded Agriculture Curricula

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Introduction

University faculty and secondary agricultural education teachers need a diverse pool of curricular resources to inform their teaching (Easterly & Simpson, 2020). Instructors' time for curriculum development is limited (Smalley & Smith, 2017), but targeted, free curriculum packages that are ready to use can effectively fill this gap. In three projects, we combined the expertise of educators, practitioners, and an advisory board from across the United States to engage with project directors, student employees, and support staff to create curriculum packages that contained written curriculum, online modules, and teaching materials for two facilitation formats. The complex nature of these projects required us to create a multi-step process of content creation, authorship, support, and publication that can be applied by others.

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How It Works

Each funded project began with a thorough literature review that informed the created instructional materials and was followed by surveys and interviews with experts and advisory board members to further define and hone our focus for each topic. Search avenues included scholarly literature, gray literature, and popular press publications.

After we built a foundation of literature, we began writing the curriculum in either a chapter or outline format. These documents formed the basis of all materials. Careful editing ensured coverage of critical content while keeping the learners' needs in mind. We worked directly with subject matter experts, advisory board members, project team members, and leadership to develop the curriculum for each topic.

The presentation of content is just as important as the content itself. As the author team finalized each module topic, the instructional design team and project leadership developed and finalized logos, color themes, and document templates used for all topics.

Once our project leaders finalized and approved initial curriculum drafts, the instructional design team approached each topic systematically and served as fresh reviewers. We designed and finalized instructor-facilitated versions before online module creation because approaching the topic as an instructor enabled us to see areas in need of clarification. Through this four- to six-week process, we transformed the original document into a multi-file package ready for usability testing.

In addition to students recruited to perform usability testing on online modules, dissemination activities resulted in a list of instructors willing to test modules in their courses. These individuals downloaded project files from a password-protected webpage and provided feedback over several months. We provided participation incentives and, in some instances, gained IRB approval to publish results of the testing. Once we completed usability testing, our entire project team performed a second major round of editing to ensure high-quality, relevant materials.

To guarantee products would be widely and easily accessible, we partnered with the institution's librarians to host all final curricula packages at the open-access teaching materials repository (STATE Libraries, n.d.). Library staff were instrumental in identifying potential copyright issues, navigating the waters of open-access publishing, and informing authorship guidelines.

Throughout the creation and editing process, accurately recording and reporting authorship and acknowledgements statements for each module was critical. Initially, with the Piña (2020–2021) project, we identified all roles contributors might perform as informed by the Contributor Roles Taxonomy (CASRAI, n.d.) and used a Microsoft Excel spreadsheet to note each person's role for each module. This process is further detailed in Murphrey et al. (2021) and should be started early in the project to maintain accurate and informed records. Technology use was essential throughout development to allow efficient collaboration, development, and delivery.

Results to Date

We successfully pioneered this process with Leggette (2017–2020), recently building on it with two additional projects (Leggette, 2019–2022; Piña, 2020–2021). The number of persons engaged increased with each new project. Leggette (2017–2020) involved 10 advisory board members, two content experts, a graduate student, two instructional designers, and 20+ testers and reviewers to create seven topics. Leggette (2019–2022) added a content expert, two instructional designers, and additional testers and reviewers (an expected 25+) to create curriculum for 14 topics. Piña (2020–2021) grew from both of those, engaging 12 advisory board members, 12 content experts, five instructional design team members, and an expected 50 testers and reviewers to create 14 topics.

Advice to Others

Embarking on a major curriculum development project is no simple task. However, it can become a powerful and energizing experience with a diverse, collaborative team that is open to criticism and suggestions. To carefully navigate the waters of authorship, copyright, open access, and other publication facts, we strongly recommend adding library experts to the team from the beginning. Also, to those unfamiliar with projects of this nature, the waiting and administrative time necessary to work with large groups of reviewers and content can be surprising. Project teams should closely monitor this process and address timeline delays promptly if possible.

The use of current technology is essential. Microsoft Office, TechSmith Camtasia, and Microsoft Teams were critical to create a high-quality product. Finally, project teams should be careful to follow standard data management backup storage, version control, and clear folder organization as previous versions were often revisited to recapture ideas. Multi-person access, as available through file sharing via Dropbox and Microsoft Teams, enabled continuity as team members changed and worked from different locations.

Costs/Resources Needed

We used personnel to accomplish goals set in the funded grant proposals: project directors, subject matter experts, instructional designers, graduate research assistants, undergraduate student workers, advisory committee members (who often serve as subject matter experts and reviewers), industry reviewers, and other reviewers. Costs will vary depending on the breadth and depth of the curriculum, current access to technology, personnel, and compensation for subject matter experts, pilot testers, and instructional design team members.

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