UI Extension Publishing Curriculum Guide

Erin Doty
Publishing Coordinator, University of Idaho Extension Publishing

Contents

University *of* **Idaho**
Extension

Introduction

EXTENSION PUBLISHING CURRICULA are intended for use by Extension educators and other instructors with specific learner audiences. In the past there's been some confusion as to what a curriculum is and the elements that are included in a curriculum.

Curriculum is often thought to be the same as an activity, lesson plan, or 4-H project publication, but these are actually elements or components of a curriculum. Rutgers Extension defines it well: "A curriculum is defined as a collection of learning activities, events and experiences structured to reinforce each other and… planned to achieve particular goals or objectives" (Diem 2004).

This guide was created to support authors of Extension curricula to ensure we are providing the best possible educational materials for our educators and instructors in Idaho and beyond.

Curriculum Types

The University of Idaho Extension Publishing has five different publication options that fall under the curriculum publication type:

1. 4-H Facilitator Guide
2. 4-H Participant Guide
3. Youth Education Curriculum
4. Adult Education Curriculum
5. Activity/Lesson Plan

4-H Facilitator Guide

This publication type is intended for use by 4-H facilitators and volunteers, teachers, camp counselors, and school-age childcare staff. It includes topical information, lesson

plans, activities, and instruction guidance required to facilitate the learning experience of youth participants. These publications are a part of the 4-H publication series and are subject to the review and oversight of the UI 4-H Youth Development Director.

4-H Participant Guide

This publication type is intended for use by 4-H youth participants, school-age children, and after-school program participants. It includes age-appropriate topical information and activities to aid in the learning experience of youth participants. These publications are a part of the 4-H publication series and are subject to the review and oversight of the UI 4-H Youth Development Director.

Youth Education Curriculum

This publication type is a collection of learning experiences designed around a central theme or objective intended for the education of individuals 18 and younger. These materials can include facilitator/teacher information, lesson plans, activities, videos, lectures, etc. These publications are a part of the Extension Curriculum Series. An example would be the Ready, Set, Food Safe Curriculum.

Adult Education Curriculum

This publication type is a collection of learning experiences designed around a central theme or objective intended for the education of individuals 18 and older. These materials can include facilitator/teacher information, lesson plans, activities, videos, lectures, etc. These publications are a part of the Extension Curriculum Series. An example would be the Healthy Diabetes Plate Curriculum.

Activity or Lesson Plan

Extension Educators and Authors can publish an individual lesson plan or activity without authoring an entire curriculum. These can be for youth or adult audiences, but still have an objective or clear desired learning outcome. These publications are a part of the Extension Curriculum Series.

Publishing Process Overview

Please see our Publishing Guidelines for Faculty page for additional information.

1. Obtain UI Institutional Review Board approval if required

2. Conduct research on need, priority, and scope
3. Submit proposal to FastTrack
4. Develop curriculum
5. Curriculum reviewed by Curriculum Development Specialist; revise as needed
6. Phase I of pilot testing; revise as needed
7. Phase II of pilot testing; revise as needed
8. Submit curriculum to FastTrack
9. Curriculum undergoes double-blind peer review process
10. Curriculum is either accepted, accepted pending revision, or rejected
11. Once accepted, curriculum enters production phase
12. Curriculum is published and distributed

Curriculum Development

In this section we will cover the suggested steps to develop a curriculum, the required components of a curriculum, and additional helpful information to support your curriculum's development.

Process Overview

1. Identify the Why (need or purpose)
2. Identify the Who (target audience)
3. Identify the What (intended outcomes and content)
4. Identify the When (topic sequence)
5. Identify the How (teaching methods)
6. Identify the Test (evaluation methods)

The Why

The first step is to identify the need or purpose the curriculum will serve. What is the central theme or goal? For example, "to decrease the number of foodborne illnesses contracted in Idaho food establishments" or "to help individuals with Type II Diabetes manage their symptoms and increase their quality of life through healthy meals."

Once you've gathered your initial thoughts on the purpose the curriculum will serve, it is recommended to conduct research on the need, priority, and scope of the project. This can be as simple as consulting

colleagues in the subject area to determine if they, too, see the need and educational gaps the curriculum could fill, or as in-depth as conducting a comprehensive needs assessment.

The Who

Next, determine who the curriculum is for. Who is your target audience? A curriculum designed for elementary school students will be different from a curriculum on the same topic designed for adults. Additionally, determine who will teach the curriculum. A community member volunteer may need more guidance and background information than a trained educator or expert in the field.

Readability

Use word choice, sentence length and structure, and paragraph length and structure that meets your audience's reading level and prior knowledge.

Developmental Appropriateness

You also want to keep in mind the developmental level of your target audience. As you continue through the curriculum development process, make sure the objectives, content, and teaching methods/activity types all align with the development level of your intended student. Developmentally inappropriate content and activities have the potential to bore or frustrate students.

Developmental Characteristics

You can refer to table 1 to learn more about the developmental characteristics of each stage.

Application of Developmental Stages

The developmental stages listed in table 1 can be applied in the following ways: (*please note that these are just examples and not an exhaustive list*)

Grades 1–3

- Keep activities short with simple instructions.
- Provide a wide variety of activities.
- Provide consistency and routine in meeting structure.

Table 1. Common developmental characteristics of children at various ages.

CHARACTERISTIC	PREP Grades 1–3	BEGINERS Grades 4–6	INTERMEDIATES Grades 7–9	ADVANCED Grades 10–13
Interest Span	Short, unless topic is of great interest. Can be increased if activity is included. (5 to 20 minutes)	Short and varied.	Lengthens with experience and interest in subject or activity.	Almost adult if self-motivated.
Motor Skills	May be easily frustrated by fine motor tasks that are beyond level of coordination.	High interest in doing active projects. Poor coordination.	Interested in skills for specific use. Can tackle more difficult jobs with more complex coordination.	Highly skilled in areas of interest and practice.
Mental Growth	Curious, learns from hands-on experiences. Developing language.	High curiosity. Limited experience. Beginning abstract learning.	Increased depth and scope of learning.	Continued increase related to experience. Can see relationships.
Ability to Plan	Has difficulty with multiple step plans over a period of time.	Limited ability, experience and judgement.	Can plan better than execute.	Has need and ability to plan.
Relation to Adults	Seeks adult leadership and companionship	Accepts leadership easily from adults.	Needs and wants guidance but rejects domination.	Wants leadership on adult level.
Relation to Age-Mates	More interested in small groups under adult supervision.	Needs to feel accepted.	Interested in opposite sex and in group acceptance.	High interest in groups, "couples" oriented

Source: Rutgers Curriculum Development Guide for 4-H/Youth Audiences, p. 21. Used with permission.

- Suggest many practical suggestions for the educator in developing their own leadership style with this age group.

Grades 4–6

- Keep projects limited in scope—this age group tends to try to take on too much.
- Make sure tangible results can be seen quickly and often.
- Suggest that the educator model activities first for students, then allow students to try.
- Encourage sharing opportunities through group activities, public speaking, community activities, etc.

Grades 7–9

- Provide opportunities for
  - leadership activities
  - group activities
  - planning and executing activities
- Suggest ways that educators may be supportive as they "step aside."

Grades 10–13

- Include more self-directed activities and opportunities for students to take leadership and ownership of their learning.

- Consider including wider-scope projects with more space for variation and customization to students' unique interests.
- Provide opportunities for students to apply what they're learning to the bigger picture—let them make the connections instead of drawing connections for them.

(List adapted from Rutgers Curriculum Development Guide for 4-H/Youth Audiences, p. 21–22. Used with permission).

The What

Course Goals

Course goals are broad, overarching statements of what you want students to **learn** by the end of the course. These directly tie into the why, or purpose, of the course. Verbs such as "appreciate" and "understand" are appropriate for use in course goals.

A few examples include:

- Understand the magnitude and the potentially serious nature of foodborne illness in the United States (*Ready, Set, Food Safe*)
- Understand how to plan healthy meals
- Gain a deeper appreciation of natural resource conservation

Learning Objectives

Learning objectives articulate what you want students to be able to **do** by the end of the course. These break down the course goals and desired knowledge into specific learning tasks and desired skills.

Learning objectives should be

- **Student-centered.** Frame them in light of what you want the students to be able to do by the end instead of what the instructor will teach.

- **Actionable.** Objectives should start with an action verb and include what the student will be able to do as a result. For example, instead of saying "have a deeper appreciation of conservation practices," an actionable objective might be "list five operational conservation practices and how they're used."

- **Specific.** Instead of using "problem solving" or "writing" as the objective, dial in on the

Figure 1. The differences between course goals (knowledge attained) and learning objectives (acquired skills).

specific skills required to problem solve or write effectively. The more specific you are, the easier it will be to measure. For example, instead of saying "Understand long-division," a specific objective might be "Solve long-division problems of 3-digit numbers divided by 2-digit numbers."

- **Measurable.** Instructors need to be able to measure if the desired skill was attained. If the learning objectives are student-centered, actionable, and specific, they will likely also be measurable.

Course Content

Course content is the meat of the curriculum. This includes all of the information, knowledge, and skills that need to be taught throughout the course to ensure students gain the desired knowledge and skills.

The content should directly align with the course objectives and goals. It's recommended that authors identify course content by addressing each course objective. If an objective is "students will be able to solve long-division problems of 3-digit numbers divided by 2-digit numbers" then what information needs to be taught to help them get there?

The When

The timing and sequencing of course content is important. As you identify the information required to meet the goals and objectives, consider when a skill needs to be learned. For example, when teaching someone to make healthy meals, learning how to create a grocery list needs to come before learning how to shop for groceries. Likewise, learning how to shop for groceries comes before meal creation.

It can be helpful to create a course outline with course learning objectives that include a corresponding bullet-point list of information that needs to be conveyed for each one. This provides a visual to ensure topics are addressed in a logical way and that nothing is left out.

The How

Now that you've determined what the objectives are and the necessary content to meet those objectives, it's time to identify how you will convey that content.

Learning Styles

Consider including a wide range of assignments, activities, and learning experiences to ensure the learning needs of students with various learning modalities are met.

Visual Learners

"Students who best internalize and synthesize information when it is presented to them in a graphic depiction of meaningful symbols are described as visual learners. They may respond to arrows, charts, diagrams and other visualizations of information hierarchy, but not necessarily to photographs or videos" (*4 Different Learning Styles You Should Know* 2019).

Apply it: PowerPoint presentations that include summarizing charts and diagrams periodically throughout the presentation or at the end can be effective. Simply having a visual teaching aid, such as slides with text and pictures, actually appeals more to Reading-Writing Learners than the visually oriented learners. Summarizing what is said in the text in a chart or diagram with meaningful symbols best lends itself to the strengths of this learner type.

Auditory Learners

Students in this category learn best by hearing information presented. They also do well with opportunities to not only hear information, but also present information themselves.

Apply it: Include lectures and videos that convey information through speaking. Provide opportunities for class and small-group discussion as well as student presentations.

Reading/Writing Learners

These students learn best through the written word. They do well with PowerPoint presentations, handouts, and reading assignments.

Apply it: Include visual aids such as traditional PowerPoint slides, articles for further reading, and writing assignments. Opportunities for note-taking and journal reflections are also a great way to appeal to the strengths of this learner type.

Kinesthetic Learners

This is the learn-by-doing group. These students learn best through hands-on opportunities.

Apply it: Encourage students who learn best through the kinesthetic modality to create flash cards for situations that require rote memorization. Include activities that get students up and out of their seats. In situations where a task is demonstrated, give students the opportunity to try it out themselves after the demonstration.

Multimodal Learners

It's important to note that not all individuals learn by just one of the learning modalities. "In fact, studies estimate that somewhere between 50 and 70 percent of the population have affinities to several different styles of learning" (*4 Different Learning Styles You Should Know* 2019).

Students can be bimodal (2 learning styles), trimodal (3 learning styles), or 4-part (utilize all four well). Students may utilize one of their learning modalities in specific contexts or may need to process information through all of their preferred modalities before they can really grasp new information.

Learning Experience Examples

- Lectures
- Videos
- Hands-on activities
- Worksheets
- Articles, books and other reading assignments
- Journal prompts
- Research projects
- Group and individual presentations
- Skits and role-playing
- Demonstrations
- Field trips
- Service-learning opportunities
- Art projects
- Fill-in-the-blank note sheets

The Test

Assessments measure what students have learned throughout the course. It's important to ensure your assessments accurately measure the knowledge and skills stated in the course goals and learning
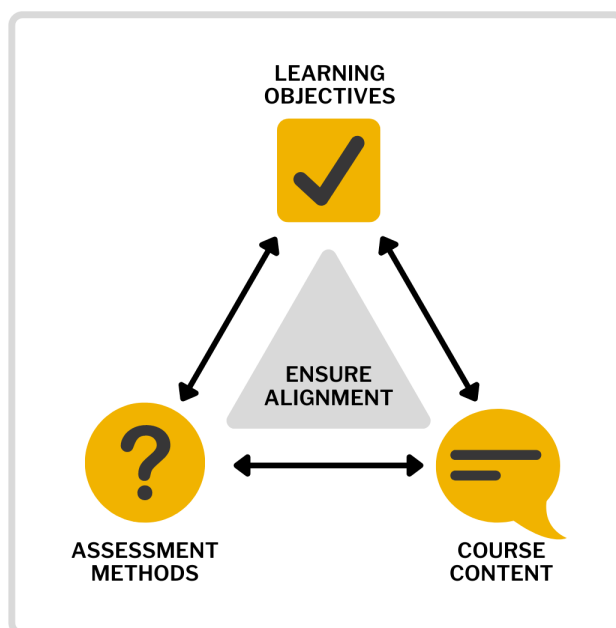

Figure 2. Alignment between learning objectives, course content, and assessments is crucial.

objectives. An effective curriculum ensures alignment of course goals/objectives, course content/learning experiences, and assessments.

Two of the most common types of assessments used to gauge a student's learning are formative and summative. **Formative assessments** are given throughout the delivery of a curriculum to help the instructor gauge how students are doing and what topics need to be reinforced or revisited. **Summative assessments** are given at the end of a curriculum and they summarize everything a student has learned from the curriculum.

Assessment examples include: observation, essays, interviews, performance tasks, exhibitions and demonstrations, portfolios, journals, and self- and peer-evaluation. (*What Are Some Types of Evaluations* 2008)

Elements of a Curriculum

This section includes the required and suggested elements of a curriculum. We recommend consulting the checklist to the right before entering the review and pilot stage to ensure you have included everything.

Curriculum Elements Checklist

Required elements are bolded and optional elements are italicized.

- ❑ **Title Page**
  - ❑ **Author Names and Affiliations/Titles**

- ❑ **Introduction**
  - ❑ **Author Contact Information**
  - ❑ **Acknowledgments**
  - ❑ **Table of Contents/Course Outline**
  - ❑ **Overview**
    - ❑ **Purpose Statement**
    - ❑ **Project Description**
      - ❑ **Intended/Target Audience**
      - ❑ *Course Overview Narrative*
    - ❑ **Course Goals**
    - ❑ **Course Objectives/Learning Outcomes**
    - ❑ *Background Information*

- ❑ Chapters/Sections
  - ❑ **Lesson Plans/Instructors Notes**
    - ❑ **Lesson Objectives/Learning Outcomes**
    - ❑ **Estimated Time to Deliver Lesson**
    - ❑ *Instructor Background Information*
      - ❑ *Terms*
      - ❑ *Topical Information*

- ❑ **Materials** (could include):
  - ❑ Visual Aids (PowerPoint Slides)
  - ❑ Videos
  - ❑ Handouts
    - ❑ Worksheets
    - ❑ Puzzles
    - ❑ Games
    - ❑ Quizzes and Answer Keys
    - ❑ Further Reading
  - ❑ **Activity/Lesson Instructions**
  - ❑ Assessment and Answer Key

- ❑ **Assessment**
  - ❑ *Final Exam(s) and Answer Key(s)*
  - ❑ *Final Project and Rubric*

- ❑ Art
  - ❑ *Figures*
  - ❑ *Tables*
  - ❑ *Charts*
  - ❑ *Photos*
  - ❑ ***Captions for all***

- ❑ **Conclusion/Back-End Materials**
  - ❑ *Glossary*
  - ❑ *Index*
  - ❑ **References**
  - ❑ **Credits**
  - ❑ **Copyright Permissions**

Introduction

Author Contact Information

Provide a phone number and/or email in case individuals administering/utilizing the curriculum have questions.

Acknowledgments

This is a great place to thank anyone that was not an author but provided assistance in some way throughout the development of the curriculum. If the curriculum was developed with the use of funds from a gift or grant, be sure to acknowledge that here. You may also choose to thank the instructors who piloted the curriculum and provided feedback.

Background Information

Provide any information that the instructor will need to know up front in order to administer the curriculum. For example, many authors of 4-H curricula include the Experiential Learning Model and/or Targeting Life Skills Model with explanation in this section.

Lesson Plans

Instructor Background Information

This is where knowing your target audience is crucial. If the intended instructors are Extension Educators or Field Experts, less background information will likely be required. If, however, the intended instructors are volunteers or after-school program educators, more background information will be required for effective execution. Who is teaching and what do they need to know in order to teach?

Materials

Include everything that the instructor/students will need to complete the lesson. If a handout, further reading, etc. is listed, **be sure to include it** either directly within the curriculum or with a link to the resource.

Visual Aids

Keep the different learning modalities in mind when creating visual aids. Include charts, graphs, summarizing graphics, and symbols for visual learners. Include bullet-pointed lists and written summaries for reading/writing learners. Include

audio clips and discussion questions for auditory learners. Include breakout activities and "apply-it" sections for kinesthetic learners. Refer to Figure 3 for examples of effective slides.

Activity/Lesson Instructions

Include step-by-step instructions for completing lessons and activities to ensure they are completed correctly and in a way that effectively transfers desired knowledge and skills.

Assessment

Include some form of assessment to help instructors/students know if sufficient mastery was achieved and what topics require further improvement.

Final Project or Portfolio

If assessment methods include a final project or portfolio, include a rubric that can be used to assess quality and depth of learning and to ensure assessment is consistent and fair.

Conclusion

References

Cite any sources referenced or used in the development of the curriculum. We generally follow the most recent edition of the Chicago Manual of Style.

Credits/Copyright Permissions

If any materials were used that were not created by the author(s), copyright permission is required to include the materials in the curriculum and the original source must be credited. This includes materials that were adapted from another source.

Further Reading and Resources

4-H Curriculum Development Resources: https://4-h.org/professionals/curriculum-development/
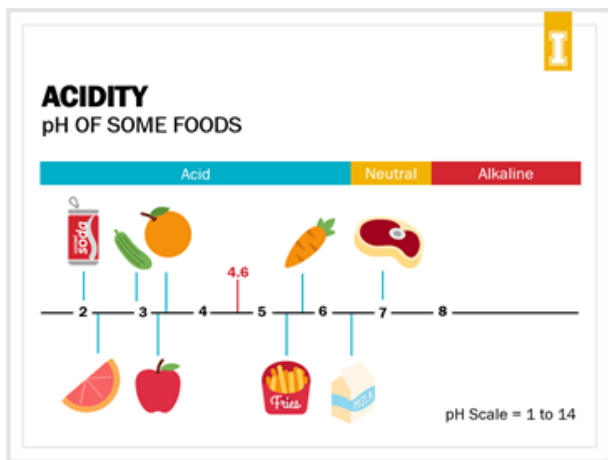
A Guide for Comprehensive Needs Assessment: https://www.cde.state.co.us/sites/default/files/documents/fedprograms/dl/consapp_na_guide.pdf

The Educational Value of Course-Level Learning Objectives/Outcomes: https://www.cmu.edu/teaching/resources/Teaching/CourseDesign/Objectives/CourseLearningObjectivesValue.pdf

Bloom's Taxonomy—Eberly Center for Teaching Excellence and Education Innovation: https://www.cmu.edu/teaching/designteach/design/bloomsTaxonomy.html

pH of food depicted with symbols in a visually appealing way.

Audio clips of pronunciations included.

Acronym of Bacterial Growth Conditions.

Activity breaks included throughout to practice skills

Figure 3. Examples of PowerPoint presentation slides that appeal to the various learning modalities from *Ready, Set, Food Safe.*

Articles about VARK Learning Modalities:
https://vark-learn.com/introduction-to-vark/articles/

Copyright Basics:
https://www.copyright.gov/circs/circ01.pdf

How to Obtain Permission:
https://www.copyright.gov/circs/circ16a.pdf

References

"4 Different Learning Styles You Should Know: The VARK Model." *The University of Kansas School of Education and Human Sciences*, July 31, 2019, https://educationonline.ku.edu/community/4-different-learning-styles-to-know.

"Design and Teach a Course: Articulate Your Learning Objectives." *Carnegie Mellon University Eberly Center for Teaching Excellence and Education Innovation*. Accessed on March 30, 2021, https://www.cmu.edu/teaching/designteach/design/learningobjectives.html.

"Developing Curriculum: Considerations and Applications." *A Resource for Missouri Educators and Administrators*, July 2016, https://dese.mo.gov/media/pdf/curr-framework-developing-curriculum.

Jang H. Kim, et. al., "Ready, Set, Food Safe." *ECS 013*, September 2019, The University of Idaho Extension Publishing.

Keith G. Diem, "Curriculum Development Guide for 4-H/Youth Audiences." *Bulletin E211*, August 2004, The State University of New Jersey Rutgers Cooperative Extension.

"The VARK Modalities." *VARK Learn*. Accessed on March 24, 2021, https://vark-learn.com/introduction-to-vark/the-vark-modalities/.

"What Are Some Types of Assessment?" *Edutopia*, July 15, 2008, https://www.edutopia.org/assessment-guide-description.