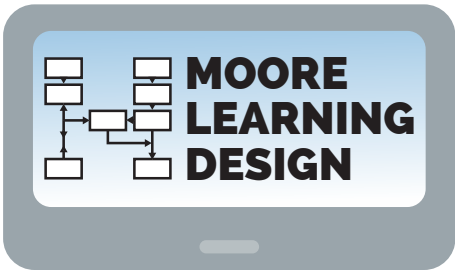

Design Document: 4-H Facilitators

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Table of Contents:

Overview of the Train the Trainer Course for 4-H Facilitators

The Solution:

Create an online interactive course using Adobe Captivate to bypass parts of the class by taking an interactive assessment test before each section. Science teachers do not have to relearn the engineering design model to complete the module, as an example. However, a homeschool mom who does not know the engineer design model can take that module so that all youth course facilitators are confident in teaching. The course would include assessments at the end of each module with 80% passing to move onto the next module. The assessments would be created in Adobe Captivate.

Videos would be created using Adobe Premiere and possibly Adobe After Effects for demonstration and discovery. Diagrams and information graphics would be made in Adobe Illustrator to enable students to retain essential information within a module. A written form of the course will be created in Adobe InDesign and saved as an assessable PDF for students who learn better with a written document or refer to course material either during the course or later for use in teaching the lessons. All lessons will be tested for accessibility using Siteimprove, which will test for:

- Accessibility (check against WCAG 2.0),
- Quality Assurance (broken links, misspellings),
- SEO module (increases Search Engine traffic),
- PDF Checker (test PDFs hosted on a website for broken links and accessibility issues)

The course will be designed using the following modules:

Module 1, Understanding 4-H

Module 2, Understanding the engineering design model.

Module 3, Know the proper use of all the equipment in the kit.

Module 4, Understand how the lessons are constructed.

Module 5, Know who George Washington Carver is.

Module 6, Experience a lesson as a student.

Focus Statement

Create online training materials for facilitators who have varying knowledge levels, teaching middle and high school youth a course called: *To Feed A Nation: George Washington Carver, Science & Agriculture.*

Outcomes:

The outcomes of this course would be:

- To have all facilitators know what 4-H youth development is
- To have trainers at the end of the module understand and be able to use the engineering design model
- Learn how to use all of the equipment in the kits provided for the course
- Understand and effectively teach the lesson *To Feed A Nation: George Washington Carver, Science & Agriculture.*
- Know who George Washington Carver is to teach the youth curriculum effectively.
- To experience the lesson as the student would.

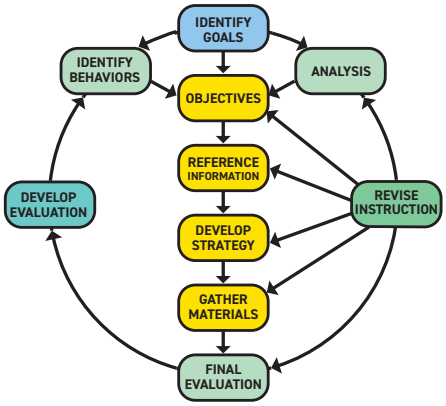
Instructional Strategies

To gain learners attention the modules will contain a mixture of short videos, images, diagrams and interactive instructions. Each lesson will have an objective clearly presented with enabling objectives listed. In order to accommodated the various learners that will be taking this course there will be pre and post tests. If students receive an 80% or greater on the pre-test they will be able to advance to the next module. If they do not then they would complete the current module and take the post test and will be able to move on with a score of 80% or better. That way all 4-H facilitators will be conducting their classes with the same level of preparedness.

The last lesson provides an opportunity to experience the lesson as the student. There are many benefits to trying out the lesson in this way. First the learner will understand better the material for the animal science lesson in the event that they do not have a background in animal science. In addition, the learner can determine if there are any areas that would give younger learners problems or maybe need more background information.

Chosen Models

Dick and Carey Design model



Model Evaluation

One of the core components of 4-H is "Learn by Doing." The curriculum that the Maryland 4-H Educators use relies heavily on the principals of John Dewey. John Dewey was a constructivist who affected many in education. He believed in a strong correlation between the learner and their environment. 4-H has embodied this approach throughout its curriculum in addition to the reflection that Dewey thought essential to the success of the learner. It is because of this that this proposed learning module uses the Dick and Carey Design model. This course hopes to use the educators' existing knowledge of their audience, what skills in science they may have, and the kits that they will receive. They will create a brush that they can use when teaching. Along the way, they will have opportunities to share and reflect what they have discovered with the other learners to gain greater insight into the work they are doing. To measure their competencies as the 4-H facilitators acquire new ones, they will be graded from a rubric that asks them questions from what they have learned, and well, they met the rubrics. A score of 80% will be considered competent.

Anticipated Impact

The impact of the design learning model will be one of familiarity among the students at the same time stretching them with new information presented in both ways they are familiar and newer ones as well.

Module 1

Understanding 4-H

Instructional Materials

1. Video
2. Images

Instructional Strategies

1. Cognitivism
2. Constructivsim

Formative Assessment

Interacting with the options on screen

Lesson 1

What is Extension?

Terminal Objective

Students will be able to compare and contrast from a list of historical information the connections of Extension to its history within 80% accuracy.

Enabling Objectives

1. Identify how Extension began.
2. Distinguish who are the key contributors to the development of Extension using the video as a guide. Extension video from 100 years. https://www.youtube.com/watch?v=xopPq2dbmQE
3. Identify the hierarchy of the structure of Extension by placing the components in order.

Lesson 2

What is 4-H?

Terminal Objective

Students will be able to label several facts about 4-H from a list and do so within 80% accuracy.

Enabling Objectives

1. Identify the key historical facts about 4-H from a set of displayed facts.
2. After viewing the video on 4-H recant the story of 4-H.

Lesson 3

What are the learning components of 4-H?

Terminal Objective

Given an empty life-skills model fill in at least 8 of the components with at least 80% accuracy.

Enabling Objective

1. Demonstrate how the life-skills model uses the 4 H's of 4-H by listing them under the appropriate word, head, heart, hands and health.

Assessment

Students will be given pre and post tests to test their understanding of 4-H. If students pass the pre-test with a score of 80% or better they can skip this module. There will be 5 questions.

Module 2

Understanding The Engineering Design Model

Lesson 1

What is The Engineering Design Model?

Terminal Objective

Students will be able to explain the 5 components of the Engineering Design Model using an empty model to fill in the information and do so with a least 80% accuracy.

Enabling Objectives

1. After reading the scenario provided describe the problem.
2. Using the space provided in the LMS demonstrate examples of brainstorming.
3. Using the plan provided fill in the missing components to create a finished plan.
4. Using the elements on the screen create a final product that follows the plan that was just completed.
5. Reexamine what you created and list three was to make it better.

Instructional Materials

1. Video
2. Images
3. Interactive options

Instructional Strategies

1. Cognitivism
2. Constructivsim

Formative Assessment

1. Interacting with the options on screen
2. Brainstorming
3. Fill in the plan

Lesson 2

Build a paintbrush

Terminal Objective

Using natural materials found in your backyard create a paintbrush using the Engineering Design Model and construct it so that it is able to spread paint.

Enabling Objective

1. Find natural elements like sticks, leaves, vines.
2. Sketch out ways you could put the elements together to make a paintbrush.
3. Using the found objects assemble them so that it creates a paintbrush.

Assessment

Students will be given pre and post tests to test their understanding of the Engineering Design Model. If students pass the pre-test with a score of 80% or better they can skip this module. There will be 5 questions.

Module 3

Know the proper use of all the equipment in the kit.

Lesson 1

How to use each component in the kit.

Terminal Objective

Student will be able use each piece of equipment and know what it is used for and will identify how it is used by selecting the correct ones from the options provided and do so with a least 80% accuracy.

Instructional Materials

1. Video
2. Images
3. Interactive options

Instructional Strategies

1. Cognitivism
2. Constructivsim

Formative Assessment

1. Interacting with the options on screen

Enabling Objectives

1. Watch the video on each piece of equipment and select the correct step-by-step set of instructions.
2. Differentiate between the science tools and the every day tools that are necessary and unnecessary to use in the lessons.

Assessment

Students will be given pre and post tests to test their understanding of the equipment in the kit. If students pass the pre-test with a score of 80% or better they can skip this module. There will be 5 questions.

Module 4

Understand how the lessons are constructed

Lesson 1

Sample lesson plan and what is included

Terminal Objective

Student will be able to describe the lesson plan using each of the compents provided with at least 80% accuracy.

Enabling Objectives

1. From the sample lesson plan eliminate all of the sections that do not belong.
2. Write a sample reflection to the lesson provided.

Instructional Materials

1. Video
2. Images
3. Interactive options

Instructional Strategies

1. Cognitivism
2. Constructivsim

Formative Assessment

1. Interacting with the options on screen
2. Provide a sample reflection

Assessment

Students will be given pre and post tests to test their understanding of the lesson plans. If students pass the pre-test with a score of 80% or better they can skip this module. There will be 5 questions.

Module 5

Know who George Washington Carver is

Lesson 1

Who is George Washington Carver?

Terminal Objective

Student will be able to identify five key contributions that Mr. Carver made to science with at least 80% accuracy.

Enabling Objectives

1. After watching the video describe one significant aspect of GWC's life.

2. From the list of 100 innovations select at least 10 of GWC's.

Instructional Materials

1. Video
2. Images
3. Interactive options

Instructional Strategies

1. Cognitivism
2. Constructivsim

Formative Assessment

1. Interacting with the options on screen

Assessment

Students will be given pre and post tests to test their understanding of who George Washington Carver was. If students pass the pre-test with a score of 80% or better they can skip this module. There will be 5 questions.

Module 6

Experience a lesson as a student

Lesson 1

Completing the lesson "Carver Veterinary Science"

Terminal Objective

Student will be able to understand how a youth will learn the information in this lesson.

Student will be able to identify at least one agricultural science career

Student will be able to explain how GWC used science to help the community

Student will be able to understand the concept of zoonosis

Student will be able to identify practices that can help prevent spread of zoonotic diseases

Instructional Materials

1. Video
2. Images
3. Interactive options

Instructional Strategies

1. Cognitivism
2. Constructivsim

Formative Assessment

1. Interacting with the options on screen
2. Provide a sample reflection

Enabling Objectives

1. After reading through the lesson list 5 new concepts you have learned.

2. Create a reflection after reading through the lesson that identifies how students appreciate why iti is important to study zoonosis.

Assessment

Students will be given pre and post tests to test their understanding of animal science. If students pass the pre-test with a score of 80% or better they can skip this module. There will be 5 questions.

Client Feedback

After reading through the Design Document, the Flow Chart and the Storyboards please provide constructive feedback on each document to ensure a quality product. In this document you can provide your feedback below, on the Storyboards there is a place on the lower right corner and on the Flow Chart there is a place at the bottom. Once you have read and given feedback please sign below. These will be the documents that we both follow throughout the prototype building phase of the process.

Feedback:

I think that this plan is appropriate for the audiences listed. In many cases the clients that we serve are unfamiliar with Extension and 4-H. I think that adding these pieces into the module will be helpful. It will also add credibility to the work by showing a clear connection to the University. I agree with the Engineering Design Module that ends with a performance based assessment (making the brush). This will be a useful tool when completed.

I agree to follow this plan unless there is a necessary correction that needs to be made.

CLIENT SIGNATURE LEARNING DESIGNER SIGNATURE