UF IFAS Extension UNIVERSITY of FLORIDA

AEC496

Planning for Effective Instruction[1]

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Introduction

As a teacher, it is often easiest to think about what topics will be taught and what learning activities will be used, but not necessarily what the end result of this instruction will look like. In order to be an effective teacher, it is necessary to plan effectively for instruction, with the end result in mind. Planning begins with alignment: aligning the curriculum with state standards, aligning teaching methods with the content, and aligning assessment with what was taught. Figure 1 further illustrates the importance of planning an aligned curriculum (Tileston, 2004).

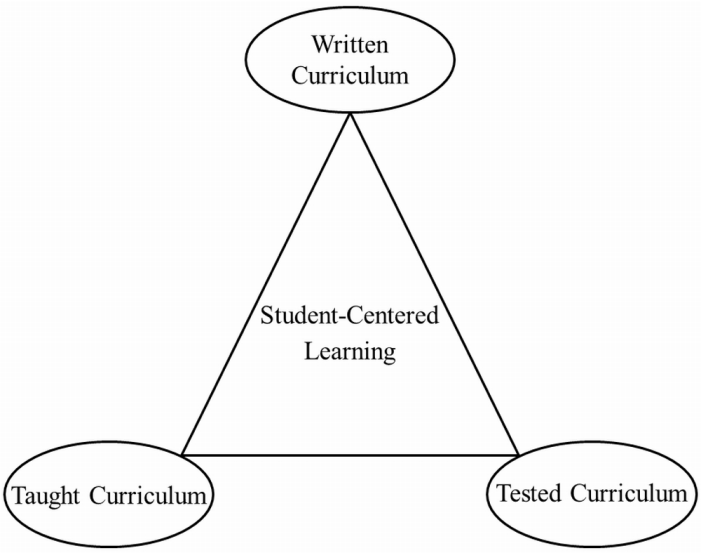

Figure 1.

Aligning the curriculum in such a way ensures that students are assessed on what they are taught, and what is being taught is aligned with the state standards. The ability level of students should be assessed before planning. Be sure to consider prior knowledge, performance on standardized tests, number of students with Individualized Education Plans (IEP), and other data available through the school that may be helpful in assessing student ability.

The Planning Process

The planning process should ultimately start by deciding what the students should be able to do after instruction. Although this is not the first step listed in planning instruction, it is a necessity that each step reflects the intent of the lesson or unit.

What Do Students Need to Know?

Begin the planning process by utilizing the state standards to develop *declarative objectives*. Declarative objectives are "factual in nature and based around information" that students should know (Tileston, 2004, p. 14). These would be things such as dates, times, vocabulary names, steps, and scientific names. Once a declarative objective is developed, it should be displayed in the classroom so students have a road map. This road map tells students what they are learning about and how they are going to obtain the information.

1. This document is AEC496 (formerly WC160, one of a series of the Agricultural Education and Communication Department, UF/IFAS Extention. Original publication date April 2014. Visit the EDIS website at http://edis.ifas.ufl.edu.

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What Do Students Need to Be Able to Do?

The next step in planning instruction is developing *procedural objectives*. Procedural objectives "should provide opportunities for students to demonstrate ways to use the declarative knowledge" (Tileston, 2004, p. 23). Procedural objectives are based on what students should be able to do. Procedural objectives are behavioral objectives that are often developed using Bloom's (1956) taxonomy. Behavioral objectives are also concerned with what students should be able to do after instruction. It is important to note that declarative objectives should be taught before procedural objectives. Doing this ensures that students have appropriate background knowledge in the subject area to carry out the required tasks.

Evidence of Learning

Before deciding what kind of learning experiences to use, it is important to decide what the expectations of learning will be and how to grade the students based upon those expectations. One way to clearly communicate grading expectations to students is through the use of a rubric. Rubrics can be used as a way to assign a grade to various types of assessments. Figure 2 displays a holistic rubric that could be used for a Habitat Management Project in an Environmental Science course. This is an example of a type of rubric that could be used to assess student learning. For more information about creating rubrics, see EDIS document AEC388 Creating and Working with Rubrics (Stoughton & Myers, 2008).

Dimension	Criteria	Comments	Points
Wildlife Inventory (15 points)	□ At least 6 wildlife species listed □ Included 3 interesting insects		
Description (10 points)	□ Brief description of at least 5 species of wildlife listed in previous section (this can include insects)		
Plant Inventory (15 points)	□ At least 6 plant species were listed □ An approximate number of the 6 species seen is listed		
Sketch (15 points)	□ Accurate □ Shows major features □ Good representation of habitat		
Opinion (10 points)	□ Includes answers to these questions: • Is the area well suited for the wildlife that inhabits it? • Why or why not?		
Goals (5 points)	□ 3 goals □ Attainable □ Appropriate		
Writing and Grammar (5 points)	□ Writing was clear and concise □ Grammar and punctuation rules were followed		
		Total Points	
Overall Comments:			

Figure 2. Habitat Management Project Rubric

In addition to utilizing rubrics, there are many other methods that can be used to assess student learning. Table 1 displays categories of assessment, an explanation or definition of the method and an example of the use of that method.

Planning Meaningful Learning Experiences

Once objectives have been developed and the method for assessing students has been determined, it is time to think about the types of learning experiences to use. The development of the learning experience should be based upon (1) building connections between old learning and new learning, (2) organizing and planning tools, and (3) storing information.

- *Building Connections*: In order for students to construct meaning with new information, they need to be able to connect new information with currently held knowledge. Utilize attention-grabbing techniques to gain students' interest in the topic and build anticipation for learning. Look for opportunities for students to develop a personal connection with the information being taught.
- *Organizing and Planning Tools*: Providing a student with opportunities to organize and categorize information helps them learn more efficiently and at a faster rate. Since students are not always naturally able to organize information, providing a tool to help them organize information is necessary. Use diagrams, charts, sequencing patterns, process/cause patterns, or branching patterns to create visual representations of the information.
- *Storing Information*: In order to help students store the information they have learned, the instructor must provide the information in a context and provide structures to help students recall information. Since agricultural education is already learning in context, focus on the development of structures to help information recall. Visual or kinesthetic methods of organization and structure help

Table 1. Methods of assessing learning (Schunk, 2012, p. 15)

Category	Definition	Example(s)
Direct Observations	Instances of behavior that demonstrate learning (a performance rubric could be developed for use in direct observations)	Observing students in a laboratory to ensure they have learned correct procedures Observing students strike an arc when learning how to weld
Written Responses	Written performances on tests, quizzes, homework, papers, and projects	Tests, quizzes, homework, term papers, and reports A paper about the safety practices used when operating a tractor Writing out the steps to starting a tractor on a safety test
Oral Responses	Verbalized questions, comments, and responses during learning	Call on students to answer questions during class. Call on a student to explain the different characteristics of a long leaf pine tree and a slash pine tree.
Ratings by others	Observers' judgments of learners on attributes indicative of learning	During each student presentation, provide a copy of the grading rubric to each student, and have all students evaluate the presentation.
Self-reports	People's judgments of themselves	
Questionnaires	Written ratings of items or answers to questions	After teaching students about air layering, provide students with a questionnaire that has a few questions, such as *"How confident do you feel about air layering after today's lesson?" "How confident are you that you could perform an air layering?" "How confident are you that you can correctly explain how to air layer?"* Ask students to respond to these questions on a 5-point scale.
Interview	Oral responses to questions	Can be self-efficacy questions, or questions to test their knowledge; usually completed individually Ask each student to interpret portions of the FFA creed. Ask student to respond to a scenario presented to determine if they know correct shop safety procedures.
Stimulated recalls	Recall of thoughts accompanying one's performances at given times	After a student completes the assembly of a floral centerpiece, ask them to recall their thoughts during specific steps.
Think-alouds	Verbalizing aloud ones thoughts, actions, and feelings while performing a task	As a student is taking a cutting and replanting, have them verbalize their actions and explain why they are doing what they are doing.
Dialogues	Conversations between two or more persons	While students are working in pairs to complete an agricultural sales call outline, listen to students conversations to determine their level of understanding.

to promote information storage. Additionally, reflection allows students to internalize and store information. Use a journal to help students reflect on their learning and make connections with prior knowledge.

Conclusion

Deciding what students need to know through the development of declarative objectives, deciding what students need to able to do through the development of procedural objectives, considering how to evaluate student learning, and planning meaningful learning experiences will allow for effective instructional planning. Following these basic steps (found in a compact format below) will allow educators to determine the specific goals of the lesson, the course, or the program in order to effectively prepare students.

References

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