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Dietitians in the Health Care Classroom — Developing Effective Lesson Plans Maximizes Student Learning: Part Three of a Three-Part Series
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In education jargon, "standards" are sentences describing what students should be taught to "be able to do" independently. A typical standard might read: "[Student will be able to] select and process food products for storage, distribution, and consumption."[1] Standards are the main concepts that all students should be able to understand by the end of the class. "Goals" break the standard down into steps the learner must be taught in order to meet the standard. "Objectives" are the specific learning activities and methods that will be used to teach each goal or step. "Alignment" is a term used in education to mean "lined up with the standards," but it has a broader meaning. "Alignment" encompasses all efforts involved in translating written teaching standards into actual, demonstrable student learning. Therefore, all lesson-planning activities are exercises in alignment. When preparing lessons and teaching them, the standard—what students should be able to do as a result of the lesson—must be kept in focus. The concept of alignment should guide every aspect of the process for the teacher, from lesson planning through postclass "reflection"—thoughtful evaluation of the teaching process.

"Authenticity" is a term that's often used in education to mean real-world, hands-on, practical learning activities and experiences. When an activity is authentic, learners often remember it better than they do an activity that's hypothetical. Carefully planned lessons that are authentic and aligned to well-written standards can help ensure that classes will be both memorable and useful.

Authenticity in education is another way of saying that the material has a direct application to a learner's reality. Patient nutrition education has the advantage of being directly applicable to every learner's life. There are few things as pertinent to an individual as food and personal health. Because nutrition information influences all students assigned to attend a health care class, it can be very motivating and can improve their well-being. In fact, education science has long regarded nutrition information as one of the most motivating subjects of study. In her landmark 1987 work, educational psychology pioneer Lauren Resnick, EdD, described the compelling nature of nutrition education when she noted the willingness of individuals to apply arithmetic to everyday life when it relates to diet.[2] Resnick observed that even students who don't enthusiastically engage in mathematics will embrace its operations to calculate their diets. Nutrition education has the advantage of being universally applicable, which makes lesson planning a bit easier than it is with more abstract concepts.

This continuing education course helps RDs learn how to develop well-aligned lesson plans that teach class participants demonstrable new skills. In this course, the third in a three-part series,

RDs will learn how to create standards, from which goals can be identified. Using goals and objectives, a functional, flowing lesson plan, which may be refined as needed, can be derived.

Standards

Standards describe what students should learn to be able to do. It's possible for students to attend an engaging class that holds their attention and perhaps even entertains and provokes thought, only to have that class impart no applicable information. Caleb Kelly, MS, RD, notes that students, even at the doctoral level, often can acquire facts in classes but gain no understanding of how to apply them.[3] A teacher can solve this problem by having a standard against which to align the lesson. The standard is the "take-away," to borrow a term from the marketing profession. It's the clear and appropriate target to which the course is aimed.[4]

Standards are the main ideas that must be included for a learning experience to be both valid and applicable. In the health care setting, there's an overriding purpose for every class taught: human life, health, safety, and/or comfort. Having a written set of standards for an entire organization or department allows anyone planning a class for that organization or department to know what needs to be taught in order to fulfill that purpose. Sometimes standards already are established for the RD. Other times, it may be the responsibility of the RD to create the standards for a class or course. Once the standards are created, they can be used by anyone who might need to teach the same topics.

SWBAT: Student Will Be Able to …

Instructors must write standards with the student in mind. Standards are the answers to the following questions: What skills will the student learn to perform? What will they be able to do after completing the lesson that they previously could not do? These statements begin with the phrase "Student will be able to" (SWBAT). What follows that phrase is usually an action verb, such as "demonstrate," "verbalize," "display," "identify," or "state." The standards involve an action, such as writing, speaking, or performing a task that can be witnessed by the teacher. Verbs such as "comprehend," "understand," and "appreciate" should be used only in connection with such an action. It's difficult to prove that a student fully comprehends something, as comprehension is internal and personal. The teacher can observe, but cannot read minds. Therefore, a SWBAT with "verbalize an understanding of" is a stronger benchmark than "the student will understand." The SWBAT goal "name three food items that have gluten" is a stronger standard than "understand which foods have gluten." Begin each statement with SWBAT. In the health care setting, "patient" or "class participant" can be substituted for "student." The concept must be taught so that the answer to the question can be objectively quantifiable, eg, "Patient will be able to name three food items that contain gluten."

If an RD or a nutrition department is to provide classes, each class should ideally have just one or two standards. The fewer the standards, the more focused the goals—the steps required to teach the standard—and objectives, which are the methods and activities used to teach each step. Multiple standards for a single course can become confusing, even for the person planning the lessons.

Suppose an RD is asked to provide instruction regarding celiac disease to newly diagnosed patients; the RD will need to crystallize the purpose of the class down to a single statement of

concept and performance—in other words, a single standard. First, it's important to identify what the class must accomplish for the patients. The term "gluten," as it relates to the disease, must be explained and taught. A class on celiac disease that teaches about intestinal damage, autoimmune triggers, and malabsorption may be accurate and interesting while also improving patients' understanding of their situations. But, as any RD knows, the truly useful information in a celiac disease class would be for class participants to learn both how and why to avoid foods containing gluten. This information should be restated as a "SWBAT." As noted previously, an active verb—something that can be demonstrated or observed—follows the SWBAT. Then the important concept, or the content topic for the class, will follow. The standard for an RD's class on celiac disease can be worded as follows: "The patient will be able to state the relationship between dietary gluten sources and the symptoms of celiac disease."

This seemingly simple sentence is the guiding force for actual student, or patient, learning. Keeping every aspect of the lesson plan aligned with this standard keeps the class on target. Note the inclusion of both dietary gluten sources and the symptoms of celiac disease; this broadens the standard to include more useful information. Some dietetics topics are very complex to explain to a class of patients. If a well-written standard is followed during lesson planning, the useful information will be included and aligned in every phase of planning and execution to increase the students' understanding and learning.

Goals

For each well-written standard, there are responsibilities—for the teacher as well as for the students. The teacher's responsibility is to prepare the students to be able to perform in some way. In this example, the standard is that the students will be able to summarize and expound upon the relationship between dietary gluten sources and celiac symptoms. This directs the lesson planning in several ways:

• The teacher must teach about celiac disease and its symptoms.

• The teacher must teach about dietary gluten sources.

• The teacher must explain the connection between dietary gluten sources and celiac symptoms.

• The teacher must give each student an opportunity to speak about (state) the relationship between dietary gluten sources and celiac symptoms, and the teacher must listen to their statements.

Those are the teacher's responsibilities. These are the foundation of the goals of the lesson. Based on these responsibilities, the goals should then be written as the standard was written—in SWBAT format:

• Goal 1: Patients will be able to identify the cause and symptoms of celiac disease.

• Goal 2: Patients will be able to list foods that contain gluten.

• Goal 3: Patients will be able to connect dietary gluten to celiac symptoms.

• Goal 4: Patients will be able to speak about the relationship between gluten and celiac symptoms.

A goal has one main concept. Each goal can be evaluated—or observed and assessed—by the teacher. In fact, the assessment of each goal can be built into the lesson planning. As the language of the SWBAT statement implies, the performance expectations rest on the student, not the teacher. The student has the responsibility to be both engaged and cooperative throughout the learning experience.

Objectives

Once the goals are determined, they can be used to develop objectives—the specific topics, activities, and methods that will be used to convey each goal of the lesson, as it is aligned with the standard. An objective states the specific activity a learner is expected to perform in class.[5] The SWBAT statement doesn't appear at the beginning of the objective, but is used further into its wording. Examples are as follows:

Goal 1: Patients will be able to identify the cause and symptoms of celiac disease.

• Objective 1.1: After listening to a presentation and slideshow about the cause of celiac disease, patients will be able to correctly identify the cause of celiac disease in a written short-answer quiz.

• Objective 1.2: After a chalkboard class-participation activity to develop a list of symptoms of celiac disease, patients will be able to write their own lists.

The first two objectives are a good start. The specific activities are chosen and used to develop the objectives to accomplish Goal 1. So far, the learners are becoming familiar with the information, but mostly through writing and listening. In order to align with the standard established for this class, the learners must participate in a speaking activity. They will need to verbalize their understanding of the subject and explain the causes and symptoms of celiac disease. The need to include speaking activities will guide the rest of the planning.

Careful development of objectives follows for each goal. The next goal might appear as follows:

Goal 2: Patients will be able to list foods that contain gluten.

To create objectives, the instructor must think of effective ways to help learners list foods that contain gluten. Among the many options are the following:

• The teacher could state information about the various foods and provide learners with a printed list.

• The teacher could share principles about gluten and ask learners to brainstorm, with guidance, about foods they think might contain gluten.

• The students could observe a demonstration involving the use of water to rinse starch away from dough to reveal the remaining gluten, as a way to show them that gluten is a tangible protein material.

• Students could do a crossword puzzle or word search puzzle based upon the names of gluten-containing foods, to help develop a familiarity with the list of foods.
By the end of this portion of the lesson, after one or two of these types of activities, students should be able to list foods that contain gluten.

Several of these ideas are now part of the lesson plan:

• Objective 2.1: After observing a demonstration of rinsing starch away from the gluten portion of wheat flour dough, students will be able to describe the gluten portion of bread dough.

• Objective 2.2: After a classroom chalkboard discussion about the dietary sources of gluten, students will be able to complete a crossword puzzle created using the names of dietary gluten sources.

Keep the objective activities interesting, as both adults and children enjoy the opportunity to experience new and engaging things.[6] Inspiring the learners to use their imagination during the learning process not only helps the learners, it also can help the teacher feel more creative in developing the objectives.[7]

For example, in the celiac disease class, the instructor might ask, “What would be a good alternative to a sandwich on regular bread?” The instructor should describe the relevance of the activity to the learners, and teach the learners the rationale for the information: “The information learned here can help you reduce the symptoms of celiac disease, so you can feel better.” What skills will help the learners in daily life? “We will help you with skills for planning meals and for eating in restaurants without discomfort.” “Let’s discuss dessert options for a birthday party.” “What food would you suggest for a backpacking trip?” This type of information can be included in each objective as part of a well-aligned lesson plan; it also can be reviewed as part of a cool-down activity, to be described later in this course.

The process set forth above, relating to the first and second celiac disease goals, should be repeated until all the goals have teaching objectives. To see all the goals addressed in this way, see the provided lesson plan template.

Assessment
Often, student work in the health care classroom setting isn’t graded. However, there still should be an observable learning assessment aspect of each objective so the RD can correct misunderstandings or misconceptions when they’re revealed. Therefore, each objective should have an assessment aspect written into it. The instructor should assess the concepts, or targets, that the participants should learn.[4] With an assessment described in the procedures, the objectives might read as follows:

Objective 1.1: After listening to a presentation and slideshow on the cause of celiac disease, the patient will be able to correctly choose the cause on a written short-answer quiz, to be assessed when the quiz is corrected in class. The corrected quizzes will be shown as the teacher walks around the room among the students.

Objective 1.2: After a chalkboard class-participation activity to develop a list of celiac disease symptoms, students will be able to note this list on paper, to be assessed as the teacher observes the written lists while walking among the participants.

In addition to the assessments that can be incorporated within each objective ("formative assessments"), there may be a culminating assessment made at the end of class (a "summative assessment"). This is usually written into an "assessment" section of the lesson plan. This could be done after class in the form of a posttest. For health care settings, a strong assessment strategy is to test class participants when they register, and then evaluate them at the end of the class using the same test. For more about formative and summative assessments, see part two of this course in the September issue of ***Today's Dietitian***.

These assessment examples for the health care setting are informal. If there are to be any formal assessments that aren't incorporated into the objectives, list them after the objectives. In a traditional school classroom, the work would be collected and graded. In this setting, collecting and grading the pre- and posttests can provide documentation and evidence of the effectiveness of the class, but each student usually isn't graded individually. Recording the learning gains of a student in the medical record may be worthy of consideration. The data on class learning gains may justify the value of the classes to administrators.

The Step-by-Step Lesson Plan

All these details may seem imposing, but the results are worth the effort. Carefully developing a lesson plan for teaching is "front-end loaded" to make both planning and teaching easier in the long run. A well-written lesson plan benefits even the most seasoned teacher. More experienced teachers tend to create more detailed written procedures. Like a laboratory experiment, the procedures are assessable and repeatable. Even for the teacher who feels capable of teaching "off the cuff," creating a detailed lesson plan helps govern time and flow. In addition, many teachers can use the same good lesson plan with consistent results. The lesson plan also provides a blueprint that can guide a substitute teacher, should the scheduled RD instructor be unavailable for a class.

A high-quality, well-aligned lesson plan should include the following:

• **Materials:** The instructor should list everything needed, down to the electrical outlets, whiteboard, and dry-erase markers that are always in the classroom. The instructor should list how much or how many of each item is needed, and who will provide it.

• **Procedure:** Class time can be viewed in terms of three main aspects.

1. Anticipatory set or warm-up: The first task in lesson planning is to prepare the anticipatory set, or warm-up. There should be a moment when the gathering and settling stops and the class

begins. All necessary preliminary announcements, housekeeping, or roll taking must be completed within the allotted time. Then it's time for the teacher to launch into a warm-up that can create anticipation, which in turn can help students expect a personal growth experience.[8] Something needs to get students' attention and begin the class. The warm-up might be a funny story to start them with a relaxing smile, or simply an announcement of the topic of the class. For example, "Today's class is on celiac disease. If you have been diagnosed with it, this class can help you learn to alleviate some symptoms." The warm-up for a class of any length should take three minutes at the most.

2. Presentations, demonstrations, discussions, games, case studies, lectures, and activities: Each separate aspect of the class should be described in a lesson plan in sufficient detail that someone else can follow the instructions. Different people learn in different ways, so the more ways the instructor can approach a topic, the greater the number of learners he or she can reach. The instructor should try to provide several different types of experiences in the span of a single class. For example, learners might hear a question and respond. Then they might see and hear a PowerPoint presentation, and then solve a crossword puzzle. The instructor should assign each activity a time limit.

In the lesson plan, each activity should have a built-in assessment device. The teacher needs to gauge how the class is going as it moves along (formative assessment).

3. Cool down: The lesson plan should provide details about the "cool down" phase of the class. At the end of the class, a summary of the course content can help the learners process the ideas. The teacher may want to leave students with a thought-provoking question, such as, "What would be a good sack lunch for a celiac disease patient? Give that some thought on your way home." This is also the time to mention an item that may have been omitted. However, it's much better to govern the entire session effectively than to try to give new information at the end. The instructor should never say something such as, "Oh, look at the time, and we still have so much to cover! Well, let me have another minute to tell you this quickly." This type of teaching isn't a cool down; it's a turn off—it effectively shuts the learning off. If the instructor runs out of time before presenting all the material, he or she should have a handout or website prepared with everything necessary and include this in the lesson plan. The teacher can conclude by saying, "If you would like to learn more about celiac disease, please refer to this handout (or Web address) as a jumping-off point for your own study. Good luck to all of you!"

Best of all, another relaxed and gently humorous cool-down moment can send the learners out the door with a sense of encouragement rather than a feeling of doom about their diagnoses: "You all came back to school tonight, and you all got an A! Now, go use this information to feel better than you have felt in a while. Please contact our office if you need an appointment for some personalized counsel." A well-done cool down allows the RD to shine as a professional. In the lesson plan, an instructor should allow three to five minutes for this cool down.

The instructor should add up the time needed for each of the lesson plan elements and make sure the total coincides with the time allotted for the class. Sometimes it's a good idea to have the lesson plan fall 10 minutes short of the allotted time. It's a common problem for a lesson to run longer than intended, so allowing extra time can help. If time remains, the RD can use it for a

question-and-answer session or to encourage students to share ideas.

Evaluating the Plan

A completed lesson plan should be evaluated in light of the needs of the various students assigned to a class. The time to do this is after the lesson plan is drafted, but before the class is taught. Instructors should gather whatever information they can about their prospective students. Who will attend this class? Are there non-English or limited-English speakers? Will their needs be met? Can everyone read? If not, are there aspects students can learn by other means? Are visual learners given things to look at? Are auditory learners given things to listen to? Can kinetic learners do things (such as rinse the dough starch from the gluten) and write things? Must everyone stay in their chairs the entire time? Preassessing the class members with a pretest, interviewing them, and/or gaining access to their medical charts may help the instructor know the varying needs to be met.

An aligned lesson plan has now been created, and a rehearsal should be the next step.

Rehearsing

Rehearsing the lesson plan is time well spent, and it should be done before the students are in the room so the RD can ensure the various ideas work and be certain the time estimates are correct. Planning 15 minutes for an activity that only takes three minutes can leave the teacher hanging with time to fill, and budgeting only six minutes for an activity that takes twice that much time will cause the course to run late or the teacher to be forced to abbreviate other parts of the lesson. Run through everything at least once using a timer.

Rehearsal is especially important when you're using electronic media and other technology. Making sure everything works properly won't only increase a teacher's comfort level but also demonstrate respect for the learners' time. The time to determine how to use the projector or buffer an online video isn't when there are participants waiting. The educator should practice and prepare before the students enter the class. The more the teacher prepares, the more the class will go smoothly and the more the lesson will be effective.

The RD can rehearse pacing, content, and delivery as well. Rehearsal also may ensure that the lesson will be understood. The instructor should rehearse in front of someone who doesn't have training in dietetics—a friend or family member, for example—and ask for feedback.

Reflection

Once the class has been taught and the assessments are complete, the RD can reflect on the lesson plan and evaluate it for improvement. After teaching the class, take time to reflect on the success of the lesson plan. What worked and what didn't? Were the time estimates accurate? Did the equipment in the room perform as needed? Were the learners engaged? Did they respond in the way expected? What must be changed before this lesson plan is used again? Did this class successfully meet the standard? This reflection is as much a part of the alignment process as any other, so educators should be sure to allow adequate time for a full reflection, along with time required to make adjustments to the lesson plan.

Summary

Well-aligned and thoughtfully created lesson plans are valuable and can be used repeatedly to guide excellent instruction. Standards define the teaching and learning of concepts and skills. Goals are derived from standards. Objectives are developed from goals. It's a process that leads to powerful teaching and learning. Taking the time to carefully develop a course is beneficial to the learner and is ultimately time-saving for the teacher. Lesson plans also can save time when the course is taught again and provide consistency in the classroom. Watching the learners leave the class armed with a new skill set, a sense of understanding, encouragement, and purpose is the reward for both the teacher and the learner.

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Click here for a lesson plan template.

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Additional Resources

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Examination

1. Which of the following correctly describes a standard?
A. A statement to guide goals, objectives, and lesson plans
B. A statement to guide student behavior in the class
C. A statement to guide the teacher's required preparation
D. A statement to guide the diagnosis-related group

2. What acronym commonly denotes the type of phrase included in a well-written standard?
A. SBLOD
B. BNWEL
C. SWBAT
D. SBWT

3. Which of the following best describes "alignment" in education?
A. It refers to the vocabulary given in a presentation.
B. It refers to the standards used to guide lesson plans.
C. It refers to the exams used to help manage classroom behavior.
D. It refers to a posttest with student expectations shown along the side.

4. How many concepts should be addressed in a well-written goal?
A. A goal should have only one concept.
B. A goal should have three variable concepts.
C. A goal should have a major and a minor concept.
D. A goal should have a major concept and an opinion.

5. In a lesson plan, what are the items called "objectives"?
A. They are patient clinical data from the medical chart.
B. They are the same as objections and disagreements.
C. They are the teaching activities that support a goal.
D. They are the data collected from a posttest.

6. What is the order of the tasks involved in the development of a lesson plan?
A. Objectives, Goals, Standards
B. Goals, Standards, Objectives
C. Objectives, Standards, Goals
D. Standards, Goals, Objectives

7. Which of the following most effectively guides the creation of a lesson plan?
A. A carefully developed set of steps that is unique for each class taught
B. A carefully developed template, which uses the same basic format each time
C. A carefully developed set of videos that can be shown without a teacher
D. A carefully developed PowerPoint program that the teacher reads to the class

8. Which statement best describes an "anticipatory set"?
A. It's an introductory attention-getter at the beginning of a lesson.
B. It's a set of a patient's laboratory tests done before the class.
C. It's a list of patients that might be attending, along with their medical data.
D. It's the expected time that the class will begin and end.

9. Which of the following best describes effective teaching methods?
A. Limit teaching to direct lecture when teaching in the health care setting.
B. It's best to aim the instruction only at the nonreaders in the room.
C. Teaching methods are reserved only for professional K-12 teachers.
D. A variety of teaching methods should be used in the classroom experience.

10. What are the benefits of pre- and posttest assessments?
A. These assessments allow the teacher to assign grades to the participants.
B. These assessments can measure the learning gains of the participants.
C. These assessments determine if students get insurance reimbursement.
D. These assessments show the class participants that the teacher is the expert.