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Want to Improve the Effectiveness of Your Lectures? Try Guided Notes

Like most professors, preparing and giving lectures is a big part of what I do for a living. In this paper, I briefly discuss some pros and con of lecturing as a teaching method, describe how a strategy called "guided notes" can make lecturing more effective, and offer some specific suggestions for developing and using guided notes.

Pros and Cons of Lecturing

Lecturing is the most widely used teaching method in higher education. The format is simple and straightforward: the professor talks (and illustrates, demonstrates, etc.) and students are responsible for obtaining, remembering, and at some later time using—on a quiz, an exam, in a paper or other assignment—the most important content from the lecture at a later date.

Advantages of Lecturing

Although some contemporary educators consider lecturing an outdated and ineffective teaching method, it affords numerous advantages (Barbetta & Scaruppa, 1995; Heward, 2001; Michael, 1994).

- *Efficient use of instructor's time.* A good lecture can (and should) be saved, reducing course planning and preparation time

from one academic quarter or semester to the next.

- *Control of course content.* When lecturing, the instructor has complete control over the level of detail and degree of emphasis with which each component of course content is covered.
- *Access to unpublished material.* Lecturing gives students access to content not available in printed form. For example, findings from just- completed or on-going research projects may be incorporated into a lecture.
- *Explanation of difficult content.* A lecture can highlight and further explain content that is particularly important or difficult for students to learn directly through text-, web-, or field-based activities.
- *Versatility.* Lecturing can be used with large or small groups, for any curriculum area, and can last from a few minutes to several hours.
- *Flexibility.* The instructor can probe students' understanding and, if warranted, make on-the-spot adjustments during the lecture.
- *Personalization.* Instructors can customize their lectures to meet the needs, interests, and backgrounds of different groups of students.
- *Motivation.* Lectures can be motivating and inspiring. Students can see and hear their instructor's level of enthusiasm for and commitment to his or her discipline. Think of those professors who got you excited about your field as an undergraduate or graduate student. Chances are good that most of these important teachers in your life were effective and inspiring lecturers.

Some Disadvantages of Lecturing

As anyone who has ever given or attended a lecture or two can attest, the method poses some challenges and potential problems for students and instructors.

- *Missed content.* While the professor might consider everything she says to be important, success in virtually any lecture-based course is dependent upon learning only a portion of the information provided in lectures. In most cases, the responsibility for determining which facts, relationships, observations, and

examples are the most important components from the lecture lies with students. Even in a well organized lecture with the professor occasionally prompting students that certain points are critical, discriminating the most important information from the merely interesting, supporting, and not-at-all-important information can be a difficult challenge for even the best students.

- *Off-topic professors.* While lecturing instructors sometimes get off-track from their primary objectives for the class session. Professors—especially those who really know and love their disciplines—are famous (infamous!) for going off on tangents during lecture. Although anecdotes often provide interesting and enriching context, they also make it difficult for even the most motivated and skilled students to determine the most important content.
- *Passive students.* The typical lecture does not require students to actively participate. One of the most consistent and important educational research findings is that students who make frequent, relevant responses during a lesson learn more than students who are passive observers. (Brophy & Good, 1986; Fisher & Berliner, 1985; Greenwood, Delquadri, & Hall, 1984).
- *Poor note-taking skills.* It is a mistake to assume all college students are competent note takers. Although note taking is the primary method used to gain content from lectures, many college students do not know how to take effective notes (Boyle & Weishaar, 2001; Hughes & Suritsky, 1994).
- *Challenges faced by students with disabilities.* The listening, language, and/or motor skill deficits of some students with disabilities make it difficult for them to identify important lecture content and write it down correctly and quickly enough during a lecture. While writing one point in his notebook, a student with learning disabilities might miss the next two points (Hughes & Suritsky, 1994). The ever-increasing number of students with disabilities enrolled in higher education makes it incumbent upon all faculty to

increase the accessibility of the knowledge we have to offer.

Guided Notes

Guided notes can enhance some of the positive aspects of lecturing and limit some of its disadvantages and problems.

What Are Guided Notes?

Guided notes (GN) are instructor-prepared handouts that provide background information and standard cues with specific spaces where students can write key facts, concepts, and/or relationships during the lecture. {See Figure 1.} GN require students to actively respond during the lecture, improve the accuracy and efficiency of students' note taking, and increase students' recall of course content. GN can be used in any discipline or subject area. GN can be created for a single lecture, for one or more units within a course, or for an entire course.

Benefits of Guided Notes

GN yield benefits for students and professors, including the following:

- *Thorough preparation.* You can't go to class and "wing it" with GN. Constructing GN requires instructors to examine the sequence and organization of their lecture content. Although this demands a high-level of planning and organization, good teachers do that anyway. Because GN can help instructors pay careful and continued attention to what goes into our lectures, this leads to ...
- *Prioritized and focused lecture content.* Many professors, this one included, are guilty of trying to pack too much information into their lectures. While this tendency is understandable—instructors want their students to learn as much as possible—when it comes to how much new lecture content students can learn and retain, less can be more (Nelson, 2001; Russell, Hendricson, & Herbert, 1984). Constructing GN requires professors to make decisions about what course content is most important for students to learn.
- *Increased student engagement with course content.* To complete their GN, students must actively respond to the

lecture's content by listening, looking, thinking, and writing. GN take advantage of one of the most consistent and important findings in educational research over the past 25 years: students who make frequent, lesson-relevant responses learn more than students who are passive observers (Brophy & Good, 1986; Fisher & Berliner, 1985; Heward, 1994; Rosenshine, & Berliner, 1978).

- *Focused questions and comments.* Austin, Leigh, Thibeault, Carr, and Bailey (2002) found that students in an introductory psychology course asked more questions and made more comments during lectures when GN were used than they did during lectures when taking their own notes. Because GN cue the location and number of key concepts, facts, and/or relationships, students are better able to determine if they are getting the most important content and ask the instructor to clarify or amplify certain points. Students can also tell if they haven't written something important in their notes and ask the instructor for clarification. For example, a student who has written down only two common outcomes for a particular event when the GN include bullets for three outcomes, can prompt the instructor to cover the missing point.
- *Complete and accurate lecture notes.* Students who take accurate notes and study them later consistently receive higher test scores than students who only listen to the lecture and read the text (Baker & Lombard!, 1985; Carrier, 1983; Kierwa, 1987; Norton & Hartley, 1986; (Suritsky & Hughes, 1991). But incomplete and inaccurate lecture notes are of limited value for subsequent study. Several studies have found that students take more complete and accurate notes when using GN than they do when taking their own notes (Austin & Sasson, 2001; Courson, 1989).
- *Improved access and learning for all students.* GN incorporate principles of universal design—they improve learning for all students (Kame'enui, Carnine, Dixon, Simmons, & Coyne, 2002). GN help level the playing field. Some of my students have shown my guided notes to their other professors

students with and without good note-taking skills, and they improve access to course content for students with learning disabilities (Courson, 1989, Lazarus, 1993; Sweeney et al., 1999).

- *Higher quiz and exam scores.* Studies have found that students consistently earn higher test scores when using guided notes than they earn when taking their own notes (Austin et al., 2002; Heward, 1994; Lazarus, 1993; Hamilton, Seibert, Gardner, & Talbert-Johnson, 2000).
- *On-topic professors.* When using GN instructors are more likely to stay true to the content and sequence they've planned for the lecture. Because the GN inform students of what should come next, instructors are less likely to stray from the planned content. And when their professor does wander, students know that the information is, at most, providing supporting context or enrichment as opposed to critical course content for which they will be held responsible.
- *Bad-day safety net.* Like people in every profession or trade, even the most dedicated college teachers every now and then experience a bad day; a day when it is impossible to teach with their usual high-degree of clarity and bubbly enthusiasm. Even if our bad days come just once or twice a quarter, our students suffer when they do arrive. Because GN contain background information and textual and visual prompts for content and specific examples, they provide a kind of safety net that helps instructors present respectable and effective lectures even when they are having an otherwise very bad day.
- *Positive student evaluations.* Students like GN. Students often show their appreciation for the extra time and effort instructors put into developing GN by saying "thank you" and giving positive student evaluations of instruction. The following is part of an e-mail message I received from a college professor who uses GN in her classes:

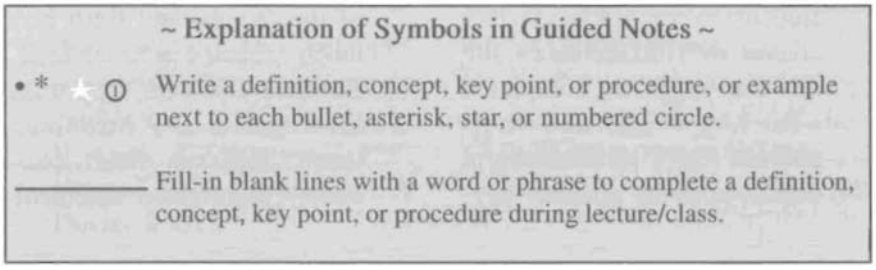
"I can definitely say that the instructional strategy that prompts the most frequent positive feedback from my undergrads is the use of guided notes. They love them. In fact,

students have shown my guided notes to their other professors and asked why they don't use them (which may or may not be a good thing, given that I'm tenure-earning). Students often comment that note taking is less stressful with guided notes, because they are less concerned about whether they are recording the information correctly. They also report that guided notes allow them to listen more closely to the information being presented during the lecture." - Jennifer L. Austin, Department of Psychological and Social Foundations, University of South Florida (personal communication, July 2, 2003)

Creating and Using Guided Notes

Constructing GN is a straightforward and relatively easy process, especially for lectures that have already been developed.

- *Examine existing lecture outlines to identify the most important course content that students must learn and retain via lectures.* Remember: less can be more. Student learning is enhanced by lectures with fewer points supported by additional examples and opportunities for students to respond to questions or scenarios.
- *Include background information so that students' note taking focuses on the important facts, concepts, and relationships they need to learn.*
- *Delete the key facts, concepts, and relationships from the lecture outline, leaving the remaining information to provide structure and context for students' note taking.*
- *Insert formatting cues such as asterisks, bullets, and blank lines to show students where. when, and how many facts or concepts to write.* For Example:



The pointing finger comes into play when you review and study your notes after class. It is a prompt to think of and write your own examples of a concept or ideas for applying a particular strategy.

Big Idea

Big ideas are statements or concepts with wide-ranging implications for understanding and/or applying course content.

- *During the lecture, project key content with PowerPoint slides or overhead transparencies.* Visually projecting the key facts, definitions, concepts, and relationships helps ensure that all students access the most critical content and improves the pace of the lecture.
- *Leave plenty of blank space for students to write.* Students' handwriting takes more space than typewritten text. Leaving three to four times the space needed to type the content that students need to write will generally provide enough room.
- *Don't require students to write too much.* Two studies comparing GN that required students to describe key lecture content with full sentences with GN that could be completed with key words and short phrases found no meaningful differences in student performance on tests of recall (Austin & Sasson, 2001; Courson, 1989). Test scores over content taught with both the "long-form" and the "short-form" GN were significantly higher than were scores over lecture content for which students took their own notes, but neither format was superior over the other in increasing recall of information. However, students indicated they preferred the short form GN, because they required less effort to complete and gave students more time to participate and ask questions. Requiring students to write a great deal to complete the GN can unduly slow down the pace of the lecture and limit how much content can be covered.
- *Enhance GN with supporting information and resources.* Insert diagrams, illustrations, photos, highlighted statements

or concepts that are particularly important (i.e., big ideas), and resources such as websites into GN.

- *Produce GN on a word processor so that changes and updates are easy to make.*
- *Make GN avaible to students on the Internet.* Put all of the GN for a course on your faculty Web site and make students responsible for downloading, printing, and bringing them to class. Some students have told me that looking over the not-yet-completed GN prior to attending class serves as a helpful advance organizer for the lecture content.
- *Provide students with additional opportunities to respond during the lecture.* Interspersing sets of questions or practice problems within the GN gives students additional opportunities to respond and receive teacher feedback during the class session. Response cards are one proven method for enabling every student in the class to respond simultaneously to questions or problems (Cavanaugh, Heward, & Donelson, 1996; Heward, 1994; Kellum, Carr, & Dozier, 2001).
- *Make students accountable for studying their completed lecture notes.* Note taking serves two basic functions: (1) a *process function,* which involves listening to, looking at, thinking about, and writing down important course content during class; and (2) a *product function,* which leaves the student with a permanent record of key course content that can be studied and used later. Research has shown that students who later study the notes they have taken in class earn getter test scores and grades than students who do not study their notes (Baker & Lombardi 1985; Beckley, 1996; Norton & Hartley, 1986). Instructors can increase the likelihood that students study and review their notes by giving quizzes, exams, and assignments that require students to know and use the course content on their notes.

Two Frequently Asked Questions About Guided Notes

Q: Isn't providing students—especially college students—with guided notes making it too easy for them? Are we just

"spoon-feeding" them the information?

A: To complete their guided notes students must actively respond—by looking, listening, thinking, and writing about critical content—throughout the lecture. I think we make it too easy for students when we teach in ways that let them sit passively during class.

Q: Why not just pass out a detailed outline of my lecture or a copy of the guided notes already completed? That way 1 can be sure students have all of the correct information.

A: Distributing completed lecture notes reduces the necessity for students to think and respond during class, or even to attend class at all.

Give Guided Notes a Try

I've used guided notes in all of my lecture-based courses for nearly 20 years, and I'm convinced they've increased my effectiveness as a teacher. While I hold no illusions that my lectures are as good as they could (and probably should) be, developing guided notes has made me more thoughtful about what I'm teaching and helped students keep me focused on helping them learn the most valuable content I have to offer.

I encourage you to give guided notes a try in your next lecture.

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Figure 1. Guided Notes for Part of a Lecture in a Course for Special Education Teachers

Parts completed by students during lecture are shown in ***boldface italic*** font.

II. FIVE GUIDING PRINCIPLES FOR PROMOTING GENERALIZED OUTCOMES

1. ***Eliminate the need*** for generality as much as possible.

A. *Prioritize the settings* in which the learner will most often function. In addition to the learner's current envtronment(s), consider the ***environments in which the learner wilt function in the immediate future, and later in life.***

B. ***Prioritize the knowledge and skills*** that will frequently be required of the
learner.

Why? Because you ***cannot teach everything for even every aspect of any one skill).***

The most important skill-setting combinations should ***always be taught directly***

Don't relegate the most critical outcomes to the not-for-certain technology of generalization programming.

2. ***Probe*** for generalized outcomes ***before, during, and after instruction.***

A. A generalization probe is ***a direct and objective assessment of the learner's use of the target skill in a non-training setting or situation.***

EX: We can assess the extent to which a student has generalized the skill of solving two-digit minus two-digit arithmetic problems with regrouping by presenting her with problems of the same type on which she has not received any instruction or guided practice.

✉ ***student writes another example here when reviewing notes after class***

B. Generalization probes can often be made more efficient ***by contriving meaningful opportunities for the learner to use her new knowledge or skill.***

EX: Instead of waiting for (and perhaps missing) naturally occurring opportunities for the learner to use her new conversational skills in the generality environment, enlist the assistance of a "confederate" peer to approach the learner.

✉ ***student writes another example here when reviewing notes after class***

C. Probing for generalization before instruction provides 3 important kinds of information.

1. Probes prior to teaching might reveal that the learner ***already performs some or all of the components of the target skill in the generality setting, thereby lessening the teaching task.***

2. Probes prior to teaching are the only objective way to know if learner's performance of the target knowledge/skill ***after instruction truly is a GO.***

3. Probes prior to teaching ***enable observation of the contingencies operating in the generality setting.***