When I first started teaching, one of my mistaken assumptions (and there were many) was that students would not only take notes, but good notes at that. How would they adequately prepare for tests otherwise? What I soon came to realize, however, was that students entering college are often under-prepared in many ways for the experience they are embarking on and that includes taking effective, complete notes (Austin, Lee & Carr, 2004; Kiewra, 1985). Students struggle with picking out the most important material from a lecture, even when they have access to transcripts (van der Meer, 2012). If we presume that note-taking is a skill that can be taught (Kobayashi, 2006), students generally are not provided explicit guidance on how to take notes at an advanced level, even though research suggests that many students would prefer this (van der Meer, 2012). Any guidance that is provided is typically through student services or other retention efforts, rather than in the actual classroom. Students have to take the initiative to seek out these services and stigma often acts as a barrier. As faculty, we teach many skills to our students—writing, presenting, analyzing, critical thinking, etc., why not include note-taking too?

Some faculty have dealt with this dilemma by providing students with their own lecture notes or PowerPoint slides before class. While students prefer receiving notes before class (Babb & Ross, 2009), many faculty strongly feel that providing notes will reduce class attendance (Landrum, 2010). Babb and Ross (2009) have found that offering PowerPoint slides online before class in fact increases attendance but only for classes where attendance is not graded. However, test performance is the same for courses that supply slides before and after class (Babb & Ross, 2009). Setting aside the issue of attendance, note-taking improves active engagement with course material, deeper level processing, and test performance (Bohay, Blakely, Tamplin & Radvansky, 2011; Kobayashi, 2006; Peverly, Brobst, Graham, & Shaw, 2003; Titsworth, 2004). Are we missing out on a valuable teaching opportunity by providing our own notes to students rather than teaching them how to take high quality notes themselves? After all, when students are in the workforce, their supervisors won’t be giving them printed out notes or PowerPoint slides.

I searched for solutions on this problem and encountered the idea of “guided notes.” These are PowerPoint slides that are given to students before class, but with key elements missing, so that they have to attend lecture and fill them in (Barbetta & Skaruppa, 1995). In a meta-analytic review, Konrad, Joseph and Eveleigh (2009) found that guided notes were a valuable tool for students in K-12, especially students with disabilities. However, the results were mixed for college students, although only three studies with variable methodologies were included. Austin and colleagues (2004) found guided notes to be effective for identifying important points from lecture and for increasing the number of examples in their notes. Williams, Weil, and Porter, (2012) demonstrated increased test performance with the addition of guided notes. Neef, McCord and Ferreri (2006), on the other hand, did not find a significant difference between providing complete PowerPoint slides and guided notes on quizzes, although the guided notes condition had higher scores for applied questions.
While guided notes seem promising, I really want my students to do more than just copy down PowerPoint slides. In fact, that often seems to be the problem rather than the solution. Students are so busy writing down anything I put on the slides, that they may miss the big picture, the important concepts, the whole point of the lecture, and copying notes doesn’t seem to lend itself to active engagement. When students are writing down something different than what is on the slides, Stefanou, Hoffman and Vielee (2008) argue that this leads to generative learning and higher test performance. How can I combine the potential effectiveness of guided notes while also encouraging more time spent on generative learning?

To this end, I developed what I have come to call directed notes. At the beginning of each chapter, students receive a handout with approximately 8-10 questions that direct their note-taking to important issues in class and encourages them to apply the concepts presented. These questions range from applied questions (“Give new examples of use, misuse, abuse and dependence?”) to discussion questions (“How as a society should we respond to drug-taking behavior?”), questions that require students to integrate the material they have learned thus far (“If a patient presented in the ER on drugs, how could you tell if they are on cocaine or heroin?”), and questions that are a part of in class activities (“What are your reactions to the anti-depressant commercials we just watched? How do they portray depression and its treatment?”). These questions also provide organizational structure for note-taking and vary in their format and response demand in order to encourage students to take notes from in class discussion and to take non-linear style notes (i.e., concept maps; Titsworth, 2004). Frequently, throughout the lecture, I refer to these questions for in class activities (“Take out your smartphones and look up the different effects of serotonin, norepinephrine, etc…”), to check for understanding (“Use the next 5 minutes to write how neurons communicate using your notes from lecture”) and for review of important concepts before tests.

While directed notes seemed to add a great deal to class (and had the added benefit of encouraging me to add new exercises, discussion questions and material to my lecture), I tested their impact with a pre- and post-test assessing overall learning of important course material and an end of the semester survey assessing student satisfaction. A dependent samples t-test revealed significantly higher post-test scores (M=10.38, SD=1.93) than pre-test scores (M=8.17, SD=2.18; t(14)=-5.392, p<.01), indicating preliminary evidence of an increase in student knowledge. Furthermore, quantitative and qualitative analyses of student surveys suggested that students frequently used the directed note taking handouts for both note-taking and test preparation and found them useful. Future research will include an A-B-A-B design to better assess the impact of directed notes on quiz performance.

*Can You Do This In Your Course? *

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*Easy Way to Implement Directed Notes *

1. After you’ve created your lecture, identify 8-10 points you want your students to walk away with and use these as your questions on your directed notes handout.
2. Questions should have the students apply the material and think critically about the subject. Concept maps, 5-minute writing summaries, or having students come up with their own examples of concepts are all great ideas. Vary the types of questions and response formats.
3. Provide the directed notes before students read the chapters so they can fill them out as they read and as they listen to lecture. Give lots of space on the directed notes for students to write on it. The more space you provide, the more it encourages students to write.
4. Refer to the directed notes throughout class to encourage students to use them.
5. Going over the directed notes at the end of the chapter can act as a quiz/test review.
6. Have students work on the answers in groups and then report back their answers to the class. This allows students time to formulate their answers and encourages class participation.

Incorporating directed notes into the classroom is an easy yet effective way to /direct/students to the essential learning outcomes of the day.
Questions from directed notes encourage both me when preparing the questions, and my students, when attempting to answer them, to actively engage with the material in new and innovative ways. We spend more time on reflection and discussion and less time on lecture and that's where we see generative learning take place.

References

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