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Using Fundamental Concepts and Essential Questions to Promote Critical Thinking

Could your students identify the most important concepts in your discipline? Do they leave your class understanding these most fundamental concepts, including the ability to reason using these concepts to answer essential questions? Do your students become critical thinkers who connect concepts and practices in your course with other courses? With their future professional lives?

Traditional ways of teaching and the customary use of textbooks can hinder the development of critical thinking and meaningful learning. Instructors often resort to lecture because of its efficiency in covering content. However, student attention often wanes quickly, and students end up memorizing notes they wrote down during the lecture and developing only a superficial understanding of course material. Also problematic is that textbooks highlight more concepts than students can possibly learn in a meaningful way. Many textbooks have as many as 45 concepts, or more, per chapter. In a text with, for example, 15 chapters, that is approximately 700 concepts. Often students have absolutely no idea which of the 700 concepts is more important than any other. As a result, they try to memorize as many as possible and leave the course with little deep understanding of any. Students can, however, develop the skills they need to find connections among concepts, assess their relative importance in the discipline, and then use them to think critically about a wide variety of concepts, principles, ideas, and questions. You can facilitate this process by structuring your course around the fundamental and powerful concepts, and essential questions of the discipline.

Fundamental concepts

Nosich (2005) defines a fundamental concept as one that grounds the other concepts. Other concepts in the course can be understood through the fundamental concept and for that reason Nosich describes fundamental and powerful concepts as ones that can be used to think about and reason through a large number of questions, problems, and information. Fundamental and powerful concepts need to be learned in a deep way; they should be present throughout the course. They can be contrasted with individual facts and less general concepts. As new concepts are learned they should be contextualized within and connected to the fundamental and powerful concepts. For example, in educational psychology, a fundamental and powerful concept is learning. Students can consider learning from multiple theoretical perspectives throughout the course. For example, how does learning happen from a cognitive view of learning? What do behavioral views add? In ethics, fairness is a fundamental and powerful concept. In an ethics course students can relate different approaches to moral and ethical decision making to the concept of fairness. Keeping fundamental and powerful concepts central to instruction helps students see the big picture of the course (the forest) and not get lost in the individual bits of information and less important concepts (the trees).

Essential questions

Another way to facilitate critical thinking and meaningful learning is to help your students use fundamental and powerful concepts to reason through essential questions of a course. An essential question of a course is a question that the course is trying to answer. How does literature enrich life? How are moral arguments justified? Essential questions help students identify the relevance of studying a particular discipline. Wiggins and McTighe (2011) define essential questions as those that:

- Cause genuine and relevant inquiry into the big ideas of the core content.
- Provoke deep thought, lively discussion, sustained inquiry, and new understanding as well as more questions.
- Require students to consider alternatives, weigh evidence, support their ideas, and justify their answers.
- Stimulate vital ongoing rethinking of big ideas, assumptions, and prior lessons.
- Spark meaningful connections with prior learning and personal experiences.
- Naturally recur, creating opportunities for transfer to other situations, refer to "core ideas and inquiries within a discipline" and help "students effectively inquire and make sense of important but complicated ideas and knowledge." (p. 73)

In educational psychology, two essential questions are how do students learn and how can I teach to support student learning? Assignments based on these questions could include analyzing lesson plans from different theoretical perspectives to determine if the lesson plan will facilitate learning, and analyzing case studies of classroom situations from multiple learning perspectives to solve problems. In ethics an essential question can be how are moral

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Spring Break - March 9-13
Faculty Meeting - March 18 (Bus)
Open House - March 21
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Plagiarism: An Interesting Disconnect between Students' Thoughts and Actions

ALMOST 800 BUSINESS, engineering, education, and health services students completed a fairly typical plagiarism survey. They were asked how strongly they agreed with a statement defining plagiarism as copying text and inserting it in a paper without citing the source. They were asked how often they engaged in this specific behavior. As in many other survey studies, 75 percent of these students agreed or strongly agreed that copying text without referencing it was plagiarism. Eighty-one percent said that the behavior should result in strong punishment, and 84 percent said that they never or rarely engaged in this practice. None of those results are new or particularly surprising.

But that was only the first half of this survey. In the second half, students were given a scenario (an adaptation of one used in previous research). It opened with some original text from an academic paper and was followed by a piece of writing identified as being authored by a student. The student writing included two identical sentences from the original text that were not referenced. Students were asked to rate the seriousness of this breach of academic integrity. Surprisingly, only 30 percent of these students agreed that inserting the text was a breach of academic guidelines, although 64 percent said that in this case a reference was required.

The researchers believe their results verify this point. "Throughout much of the literature on plagiarism in higher education, there is an implicit assumption that students who understand plagiarism, who have high ethical views, and who declare not to engage in plagiaristic behavior are able to recognize and avoid it in practice." (p. 34) In other words, they believe there is a serious disconnect between what students think and report and what they actually do when faced with an incidence of plagiarism. They point out a further paradox. Students are surveyed as to their beliefs about plagiarism, which means we ask them to provide honest reports of their own dishonest behaviors. Doesn't that motivate them to give the answers they think are correct as opposed to answers that truthfully reflect their beliefs?

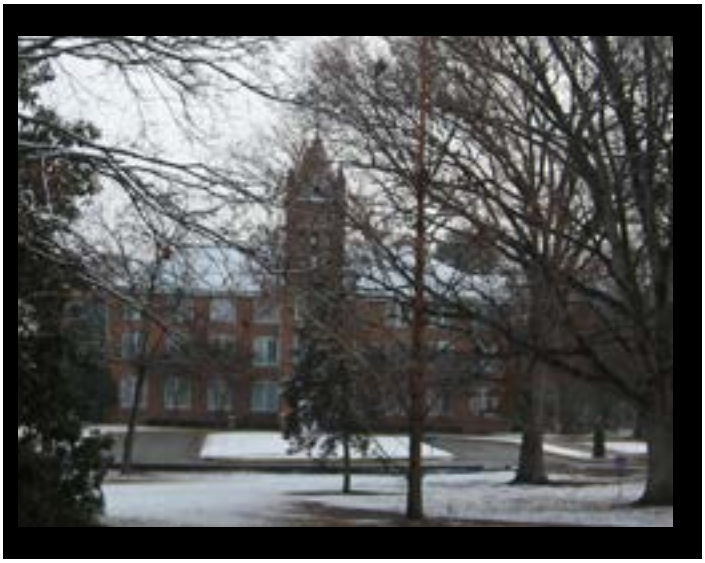
Why didn't more of these students see this insertion of text from another source as a legitimate instance of plagiarism? The authors wonder if maybe they didn't think taking just two sentences was enough to constitute plagiarism. Maybe students think that plagiarism involves taking whole papers and submitting them as their own. But a majority of these students did see the need for the material to be referenced, which would seem to indicate that they recognized the plagiarism, but just didn't consider it all that serious.

Perhaps as faculty we aren't doing as much as we should to promote academic integrity. Its importance to the academic enterprise is so obvious to us that we forget that students do not see the world as we do. Students also do not understand that when they plagiarize, they are the biggest losers. They see borrowing ideas and information from others as a way to make a difficult writing assignment easier. Yes, maybe they will be caught and punished. That's the risk they take, but compromising the potential of a learning experience, that's the real and high price every student pays when the work the student submits isn't his or her own. Are we confronting them with that message often enough?

Reference:

Risquez, A., O'Dwyer, M., and Ledwith, A. (2013). "Thou shalt not plagiarize": From self-reported views to recognition and avoidance of plagiarism. *Assessment & Evaluation in Higher Education*, 38 (1), 34-43.

Maryellen Weimer, PhD; Teaching and Learning; Faculty Focus; January 13, 2015; [http://www.facultyfocus.com/articles/teaching-and-learning/plagiarism-interesting-disconnect-students-thoughts-actions/]; February 26, 2015.



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claims justified? Assignments based on this essential question could include comparing how much weight is to be given to statistics, narrative, tradition, or logical reasoning in justifying a moral claim and then comparing that across several moral issues. We could ask our students to think through why statistics or narrative matter more in one case and not another. They would leave the class with the skills required to assess the different elements of a moral argument and the ability to explain how those elements can be used to justify a moral position.

If students memorize concepts but cannot think critically using those concepts, then the concepts are meaningless to the student and will soon be forgotten. Additionally, if students cannot determine which concepts within a course are fundamental and powerful as opposed to less important, their efforts to learn are undermined by a lack of focus. Students can leave your course with a strong grasp of course content, and the ability to think critically within the discipline if you 1) explicitly identify and teach them to understand deeply the fundamental and powerful concepts of the course, and 2) create tasks and assignments that require them to reason about essential questions of the discipline using those concepts like professionals in the field.

References:

*N*osich, G. M. (2009). *Learning to Think Things Through: A Guide to Critical Thinking Across the Curriculum* (3rd Ed). Pearson Education, Inc., Upper Saddle River, New Jersey.

Wiggins, G & McTighe, J. (2011). *Understanding by Design Guide to Creating High Quality Units*. ASCD, Alexandria, VA.

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Julie Schrock, PhD and Steven Benko, PhD; Instructional Design; Faculty Focus; January 12, 2015; [http://www.facultyfocus.com/articles/instructional-design/using-fundamental-concepts-essential-questions-promote-critical-thinking/] February 26, 2015.