



INNOVATION ABSTRACTS

Published by the National Institute for Staff and Organizational Development (NISOD) • College of Education • The University of Texas at Austin

A CALL FOR A PRACTICAL CURRICULUM IN HIGHER EDUCATION

The various hierarchical levels in a corporate business and business mergers, countless statistical formulas for probability, and, of course, accounting, are just a few of the topics covered while working on my bachelor's degree in business management. Important material you might suggest. Good information to know, you might possibly say. I say, "I want a refund." What my college's curriculum overlooked was that few of the aforementioned topics held as much weight as the most significant skill expected in all profit-based industries—the ability to sell. More specifically, without the ability to be successful as a salesperson in any sector of business, relatively few other topics will prove to be beneficial. Now before I go any further, it is important to say that I am a huge proponent of higher education, especially since I teach college-level U.S. history and truly believe in its undeniable benefits. However, I do question some of the material taught in secondary and postsecondary institutions, particularly in terms of their ability to prepare students for the real world. So I question why so many institutions teach what few people care about in the real world?

Now as an academic, I am heavily devoted to theory within my specific field, as are most professors. Despite this fact, my teachings are not limited to theory, but focus on practical applications. The argument here is that theory should not be the beginning and end of our pedagogical work. So staying true to what I am "preaching," what follows is a practical example of this argument. I rarely teach specific dates in my U.S. history class. Students knowing the correct century, as well as whether something happened early, mid, or late in the century, is the most that is required of them to do well in my class in reference to dates. Of course, there are exceptions, such as knowing when America declared her independence and when the American Civil War began. However, do students really need to know the dates of presidents' birthdays? More to the point, do we really need to care? The Louisiana Purchase was completed on April 30, 1803, but how many students, who do not

continue on in the discipline of history, are going to remember that date after they leave college? Now the probability that they might remember the Purchase happened in the early part of the 19th century is much greater. It is reasonable to suggest that requiring the less specific date is much more practical, as these dates are typically not what are asked in interviews, regardless of whether the position is history related.

Continuing with the prior example, you might be asking yourself, if not specific dates, then what do I teach? Isn't history all about dates? The answer is whatever makes the content significant to my students. In other words, whatever makes them motivated to be engaged—within reason, of course. For instance, slavery is a major historical factor in United States and world history, one that cannot be overlooked by any historian. Yet, students may become bored with seeing this topic continuously revisited when discussing various time periods covered throughout the semester. So one day my goal was to find a new element to bring into the topic, while still covering the necessary material. The aspects of slave songs and religion came to mind. I began to research and use many knowledgeable scholars' works on African Americans' connection to the Baptist religion, in the 19th century and as seen in present day America. Students may not care about what type of faith 19th century slaves practiced. Simply put, there are individuals who do not find history interesting or important. Yet, when shown the connection to their lives, such as how this affected what would be the primary religion practiced by African Americans today, and suddenly the relevance and interest rises.

This debate is obviously not limited to the study of history; it lends itself to any educational effort or goals. To enhance our success within the practice of pedagogy, we should be more discriminating in deciding what information is vital, as opposed to, for lack of a better phrase, a waste of time.

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STUDENTS' QUESTIONS OPEN NEW PATHS TO EXPLORE

In "Mathematics for Elementary School Teachers," a course for pre-service teachers, I decided that the homework would always be the same. The students would ask three questions using the following format: "My question is..." and "I ask it because..." The questions would stem from the material of the day, and students were free to ask about any topic covered in class.

I wasn't quite sure how this would work, nor exactly what to do with it. Obviously, I couldn't grade their homework in the traditional sense. First of all, the novelty of the assignments would require students to make quite an adjustment, and I felt grading their work would be more a subjective, judgmental assessment, which wasn't my intent.

I was absolutely amazed at the range and depth of the thinking that went into students' questions. In some cases, their questions anticipated an extension of the topic covered, leading me to reconsider how to construct the next class. In other instances, there was overlap. But in every case, students had unique perspectives that reflected their concerns, interests, and intuitions about the topic.

The students keep their questions and my responses in a folder that they hand in at the end of the term. I will guide them to examine the evolution of their thinking about math topics, how they are responding to their growing knowledge and skills in mathematics, and how it affects their thinking about themselves as teachers of mathematics. For example, I introduced them to the binary system through an activity designed to have them talk about different base number systems in the context of place-value systems. Beyond the typical questions about the daily utility of the binary system, there were questions such as "Are there decimals in the binary system?"; "Why teach two ways to convert between base systems?"; "What base system is time?"; and "Are there bases greater than base-10?" As another example, a student asked, "What's the point of fractions?" Although this might seem like a simplistic, perhaps antagonistic and hostile question, it's not. It generated much discussion and led us to consider the merits of the metric system, which is easier to understand and do operations with using decimal notation rather than fractions. Furthermore, one student had done some research for an English paper and educated all of us on why the United States chose not to adopt the metric system.

The essence of this idea is that I have created an individualized dialogue with each student and can reply in kind with questions to their questions, pushing them to do more reading, exploration, and research on their own. Although there is the common core of information that all will experience, their questions have and will continue to reflect individual paths to understanding math in a way that they had not previously considered.

I am delighted with the apparent success of this

approach and it has stimulated a considerable amount of classroom discussion. When I hand the homework back, I allow them to read my replies and ask further questions in class. I also make a list of the questions I want to discuss, so we have an outpouring of ideas that would, in my view, otherwise remain unvoiced.

The bottom line is that the class has been transformed into a seminar-style, student-directed "multi-logue." I would not have anticipated the subtlety and sophistication of the questions and the discussions. There has been an evolution in their thinking as well as mine. Somehow, treating these community college students as if they were in a graduate school seminar elevated their approach to understanding mathematics. In addition, I am learning more about students' thinking and their range of math concerns with this three-question homework format than I would have learned by the traditional approach of lecture, discussion, activities, homework, and quizzes. I am not anti-traditional, but rather, pro-awareness beyond the traditional.

This piece of serendipity will guide my thinking about introducing the same concept into my other courses. I suspect that it would have to be a much more limited approach because the curriculum must be addressed, particularly in courses such as pre-algebra where some foundations must be established in order for students to be successful in algebra.

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