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Foundations for learning: The impact of redesigning introductory courses

Last year, the Chancellor charged the Retention and Timely Graduation Task Force with developing recommendations that would encourage students to stay at KU and reduce the time it takes them to complete their degrees. The Task Force made ten recommendations, including promoting awareness of the challenges associated with retention and timely graduation, increasing student engagement, redesigning courses, and tracking student learning systematically and developing effective ways to evaluate and document student progress.

In this issue of Teaching Matters, we’ll explore some ways that faculty and instructional staff members can redesign courses to promote deeper learning and help students advance in their career goals.

One example is Paul Atchley’s development of an online orientation for psychology majors (pages 4–5). Atchley’s analysis shows that students who completed the orientation demonstrated a remarkable increase in their knowledge of psychology as a major and their ability to plan their program.

Another example is Angela Lumpkin’s work in her introductory sports management course (page 6). Lumpkin wanted students to develop better writing skills, as well as broaden their understanding of possible career paths. She blended the two objectives and created integrated, sequential assignments. The result? Students are making significant progress toward both goals.

These examples illustrate that taking a fresh look at introductory courses can bring us closer to meeting KU’s retention and graduation goals.

—Judy Eddy, CTE

The critical importance of foundation courses

This is a challenging time for American higher education as we operate under two pressing constraints. On the one hand, we would like to offer a curriculum that graduates more students in four years and most within six. On the other, we are reminded by government, accreditation agencies and the popular press that we need to guarantee higher levels of knowledge, skill and understanding in those students we graduate. Resolving these problems requires a high priority for our academic leaders, and it is likely to play a larger role in the way we carry out our courses.

These are not new pressures on us, though public attention to them is relatively recent. Years ago a colleague from another university told me about physics and engineering faculties who asked for new money to teach calculus courses for their majors.

The math department’s calculus sequence were unprepared for entry-level science and engineering courses. They were losing time teaching math that was nominally covered in pre-requisite courses, and they wanted to teach those courses more effectively.

When the dean’s office inquired, the math faculty were already aware of the issue. Their internal data indicated that a student who received a C in the first calculus course had less than a one in five chance of passing the second one. They used partial and extra credit to pass students whose work was poor, and they did so because the administration criticized the department if their failure rate was high. It was not acceptable for one department to be a barrier for completion of so many other majors that required math courses as pre-requisites.

The story points out the critical importance of foundation courses. We presume that first and second year students learn to write well, engage in critical reading of narrative and evidence, and approach unfamiliar problems with flexible solution strategies. Those critical skills and knowledge ready them for more sophisticated activities in advanced courses.

This conversation is different now, however, because it is no longer acceptable to allow only the very best students to enter advanced levels of our fields. We are expected to find a way to teach the fundamentals of our field so that most students can learn enough to succeed in the major they choose. Adjusting the passing point on a curve is not a satisfactory solution, as eventually that would reveal our lowered standards.

We are challenged to identify and adopt different forms of teaching than most of us have enjoyed, both as students and as teach-
CTE VIEW

CTE is pleased to announce that Kris Bruss, communication studies, will serve as a Faculty Fellow this semester. Kris helped facilitate CTE’s Best Practices Institute the last two years. This spring, she will lead new faculty programs and help develop an e-mentor program, to begin next fall.

Kris Bruss joins CTE as Faculty Fellow for Spring 2011

CTE VIEW

Making students collaborators in their own success

Paul Atchley, Psychology

What does it mean to improve student success? Higher retention and graduation? Increased understanding of course goals and improved learning? Better prospects for a job and long-term happiness? I would argue it is all of these. To achieve these things, we must start working with students outside of the classroom at the start of their college experience (or maybe even before) using new models of teaching and learning.

The Department of Psychology developed a course to directly address career planning and development, but data indicate that course also has the potential to impact the first two issues as well, making it a potential model for other campus units. PSYC 102 (Orientation Seminar in Psychology) is a mandatory one-credit, pass/fail, online course (via Blackboard) designed for students interested in the psychology major.

The course requires students to work with material covering their own goals, the goals of the major, and preparation for success after college. By the end of the course, students develop a portfolio in which they consider their own goals, plan their major (including experiences outside of KU such as volunteering, service learning and scholarships, as well as options in the department other than classes, such as research), and plan how their college experience will support post-graduate or career goals.

I knew I would teach the course as an overload to hundreds of students each semester. Therefore, I designed the course to be manageable but meet the goals of increased understanding of the major and careers, so students could make better choices in and after college. To assess if it works, I recently collaborated with a group of undergraduates to analyze student self-assessments taken before and after the course. We looked at students’ knowledge of the major and ability to develop course and career plans. The results were striking. As shown in the figure, students went from low novices about the major to near experts. We saw a similar effect for planning (improving from...
In her introductory health, sport and exercise sciences course, Angela Lumpkin structures the class around writing. By doing so, Lumpkin is trying to address two different needs she sees resurface in her students every year. As she explains, “The genesis for the changes in my class goes back to concerns that I have about students’ writing abilities. The class is designed for freshmen and sophomores who are thinking about majoring in sport management. They’ve already had one or two freshman writing classes, and what they bring with them is the view that they don’t like to write, and they are resistant to any writing expectations.” She adds, “As I started thinking of changing this class to try to emphasize [improving their writing], I was also overlaying the goal of them trying to figure out what they want to be when they grow up. I thought I could kill two birds with one stone: help students work on their writing skills and help them explore options in sport management. They’ve already had one or two freshman writing classes, and what they bring with them is the view that they don’t like to write, and they are resistant to any writing expectations.”

Lumpkin designed four sequential, interconnected writing assignments. The first is an interview in which students find someone who works in the career they are interested in, writing a report on what they learned afterward. For the second assignment, students research the steps needed to get to their ideal career path, presenting their findings through a written report. Their third paper is heavily research based, leaving the fourth one to be a reflection on what they have learned about their career choice.

Between each of the four key assignments, and, in some ways, acting as a bridge between these, students revise and revise. The revised component of the old paper becomes a part of the new paper, the beginning of it, to be precise. This happens after students have met for peer review, so that in the end they are getting feedback on their writing from both their classmates and Lumpkin.

Many students have said to Lumpkin that they feel their writing has improved. But that’s not the only benefit. After their research many students want to change career plans. “About half a dozen change [every semester]. They say, ‘Oh, after I interviewed this person I found it wasn’t at all what I thought it would be, and now I’m going in a different direction.’ I hope that this year I will broaden their perspective with the resources I give them. They need to know what else is out there.” In her class, they will be writing their way toward that knowledge.

For more about this project, see www.cte.ku.edu/gallery/visibleknowledge/lumpkin
Seven research-based principles for smart teaching

In a recently published book titled *How Learning Works*, Susan A. Ambrose and her co-authors introduce a set of key principles underlying learning, from how effective organization enhances retrieval and use of knowledge to what impact motivation. The principles provide teachers with an understanding of student learning that can help them see why certain teaching approaches are or are not supporting learning, develop or refine strategies that foster learning, and transfer and apply the principles to various courses.

1. **Students’ prior knowledge can help or hinder learning:** If prior knowledge is accurate, it provides a strong foundation for new knowledge; if not, it can interfere with learning.

2. **How students organize knowledge influences how they learn and apply what they know:** Students make connections between pieces of knowledge. If those connections form accurate knowledge structures, students are better able to apply understanding; if not, students can fail to apply it appropriately.

3. **Students’ motivation determines, directs and sustains what they do to learn:** When students find positive value in a learning activity, expect to achieve a desired learning outcome, and perceive support for learning, they are likely to be motivated to learn.

4. **To develop mastery, students must acquire component skills, practice integrating them, and know when to apply what they have learned:** As instructors, it’s important we are aware of elements that lead to mastery, in order to help students learn more effectively.

5. **Goal-directed practice coupled with targeted feedback enhances the quality of learning:** Learning and performance are best fostered when students engage in practice focused on a specific goal, target an appropriate level of challenge, and practice frequently and sufficiently enough to meet the performance criteria.

6. **Students’ current level of development interacts with the social, emotional and intellectual climate of the course to impact learning:** A negative climate may impede learning, but a positive one can energize learning.

7. **To become self-directed learners, students must learn to monitor and adjust their approaches to learning:** Students improve their effectiveness as learners when they engage in metacognitive processes to monitor and control their learning.