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## UC pushes for new, integrated curriculum

by UCLA IDEA staff

For 20 years, Sheryl Ryder taught business economics and virtual enterprise classes to high school students in Northern California. She had never considered combining her lesson plan with one from an algebra class.

That was, until she attended the first University of California-sponsored conference on integrated curriculum. There, her small group made up of Career Technical Education (CTE) teachers and math teachers came up with lesson plans that used algebraic equations to graph a business's break-even point and profit margin.

"Magical things happen when teachers spend time together, share ideas and resources," said Ryder, coordinator of the CA Business Education Leadership Project, which develops standards-based curriculum and assessment tools for CTE classes.

"There's natural collaboration in lessons and projects. I do see how they actually fit," she said.

Ryder and about 60 other CTE and math teachers, UC staff and other educators attended the UC Curriculum Integration Institute, a conference held in Lake Arrowhead last month to develop four new college-preparatory courses that would combine business and math curriculum standards.

Working at break-neck pace, the participants had four days to push past their resistance, develop key assignments and a course outline that could be adopted by schools statewide.

"We asked them to be vulnerable to giving up their ideas," said Don Daves-Rougeaux, UC associate director of undergraduate admissions. "The idea is to create a whole new course, not a math course with business or a business course with math."

Students interested in attending a public university in California must take a minimum of 15 college-preparatory courses across different subject areas. These courses are known as a-g, with each letter pertaining to a subject area.

Most CTE courses statewide have not qualified as a-g and when they do, they usually receive "G" status for electives. At the same time, most academic courses do not provide students with practical and technical skills. Recently, there has been an effort to integrate these courses so students are simultaneously provided with career and technical training and prepared for college. The hope of the UC institute is for these new courses to combine with rigorous mathematics instruction to fulfill the "C" strand of a-g.

Combining both career and technical preparations with core academic instruction could open up a new level of opportunity to high school students.

### Linking possibility

Marisa Saunders, senior research associate with UCLA's Institute for Democracy, Education, and Access (IDEA), said that unlike other education initiatives that target specific student populations, this integrated approach could benefit all students.

"For students who might succeed in a traditional high school setting and for those who might struggle, it brings learning to life. All students learn more and better when they can apply academic knowledge and skills to real-world situations and problems," said Saunders, who also co-edited *Beyond Tracking: Multiple Pathways to College, Career and Civic Participation*.

Since 2006, IDEA has been conducting research on the Linked Learning approach to high school transformation, formerly called Multiple Pathways. Presently, Saunders leads a research team conducting case studies of linked learning at 10 school sites statewide.

One of the biggest challenges faced by school and district officials has been students forced to choose between college- and career-readiness, Saunders said. For students interested in college, there is often little time in their schedules to try CTE courses, let alone a series.

"What the UC is attempting to do by creating this innovative curriculum is removing the barrier and linking possibility," she said.

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### Resistance and Revolution

The UC's effort to forge collaboration between math and CTE teachers was met with some resistance.

Monrovia High math teacher Dean Schonfeld said math teachers tend to think in a linear fashion — teaching one concept before moving to the next in a sequence. He worried students might be unable to digest one concept before being introduced to a set of new ideas in an integrated curricular approach.

Schonfeld, who wants to pilot a statistical reasoning and sports course at Monrovia, said the obligations of the Academic Performance Index — a state measure of school progress from one year to the next based on the California Standards Test — weighed heavily on teachers.

“We are all under the PI gun,” said Schonfeld, who hopes UC can help push the state to relax those obligations.

Teacher credentialing poses another challenge to creating integrated courses. A math teacher may not have the necessary training or credential to teach a course that emphasizes business, and vice versa. Some schools have

sidestepped that hurdle by placing pairs of teachers in an individual class, but that structure is a luxury not many districts can afford during a period of fiscal crisis.

UC's Daves-Rougeaux challenged the attendees to look beyond these immediate obstacles.

“Someone needs to take that first step,” he said.

Another obstacle is perception, said IDEA researcher Saunders.

Sometimes counselors, who do not understand the integrated approach, steer students away from those courses. That flawed perception extends to parents and students as well, she said.

“There has been a long-standing belief that anything hands-on related or with real-world applications isn't for college-bound students,” Saunders said. “This can work to alter that perception and it's great the UC is leading this effort.”



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