

Land Grant Youth Entrepreneurship Symposium:

**Case Study: Refining a College-level Entrepreneurship Course for High School Students**

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In 2003, Penn State University piloted a one-semester course entitled "Introduction to Entrepreneurship", with the goal to develop entrepreneurial skills in a mixed class of undergraduate business and engineering students using the problem-based learning (PBL) approach. All course materials, including rich media/video are provided on-line via the ANGEL course management system. The challenge issued to each team: develop a new venture concept that could grow to company with multi-million dollar annual revenue by year 5. Student teams had no more than two members from one major, with team size of three to six students. Starting from their new venture "vision", the teams refined their business concept as they addressed entrepreneurial issues including bootstrapping, opportunity identification, intellectual property, marketing, and financial management including fund-raising. In the PBL model, students are expected to take command of their learning, read or view the requested material prior to class, and come to class with questions on how a topic relates to their new venture idea. Faculty serve more as mentors than "chalk and talk" lecturers. Thus students experience an integrated learning experience based around a real-world entrepreneurship activity.

To measure if the "Introduction to Entrepreneurship" course could help students understand entrepreneurship and develop entrepreneurial skills in just one semester, an assessment project was conducted. Using 4 semesters of course data, the test group was made up of 57% engineering students, 40% business students and 3% from other majors. Students were given a 63-question survey at in week 1 (pre-test) semester, and week 14 (post-test) of each semester. The data showed students improved significantly in three areas in the 15-week class:

- Personal comfort with ambiguity
- Perceived feasibility of entrepreneurship
- Entrepreneurial self-efficacy (marketing, innovation, management, financial control)

In addition, over 90% of the students responded with either a "agree" or "strongly agree" to the following statements:

- helped me to better understand entrepreneurship
- is a good way to learn about entrepreneurship.
- I would recommend to someone who wants to become an entrepreneur.

The development of the entrepreneurial mindset can begin at any age, as shown by the youth doing profit-making activities such as lemonade stands, newspaper routes and lawn mowing services. Positioning the "Introduction to Entrepreneurship" course for pre-college students was a stated goal at the creation of the Introduction to Entrepreneurship course. With the assessment data showing positive impact on students, supporting a high-school entrepreneurship course was the next step.

In Fall 2004, Ms. Nicole Matz helped make this vital step in expanding PBL entrepreneurship education. Ms. Matz is a teacher in Delaware Valley School District, approached Penn State with the request to use the Penn State ANGEL resources and teach the "Introduction to Entrepreneurship" course to her high school students as a half-year course. The collegiate course materials were reviewed for application and use in the high school setting, and the course was piloted at Delaware Valley High School in the 2005-06 academic year, and continues as part of their curriculum. The project was success, as measured from all stakeholders: teachers, students and administration. Innovative and viable new venture ideas were developed by the students, such as a custom chocolate store (in co-operation with Hershey Foods). "Entrepreneurship is very important to students, regardless of what career they go into down the road," Matz says. "There's a core set of skills that they're learning and they're acquiring within this setting, and no matter if they're a teacher or a CEO of a big company or a doctor, they're going to need to be able to think creatively, collaborate, and communicate with one another."

(For more information see <http://live.psu.edu/story/15228>)

In this session, we will review the "Introduction to Entrepreneurship" learning objectives, PBL pedagogy, and lessons learned. We will also discuss the challenges of getting students to develop an entrepreneurial mindset - meaning they see creating a job as a valid (and attractive) alternative to getting a job, but creating a job requires special skills, attitudes and knowledge.