

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

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http://media.smeal.psu.edu/fcfe/cel/cel_content.html

What skills/attributes/knowledge should all Entrepreneurship students have? Option list includes:

- Vision
- Passion
- Optimism
- Recognizes opportunity: sees the world through the eyes of the customer
- Acts on opportunity
- Persistence
- Collaboration: team-oriented
- Globally aware
- Ambidextrous thinker: mixes rigor with creativity
- Tolerance for ambiguity
- Calculated risk management
- Ability to clearly define problems
- Communication skills: spoken, written, non-verbal
- Basic business skills
- Leadership
- Networking

Teaching/Learning E-SHIP

“Teachable”



“Innate”

- Developing viable business model around new product/service concept
- Business (finance, accounting, marketing, sales)
- Communication (written, oral, non-verbal)
- Opportunity Recognition
- Leadership / ethical thinking
- Knowledge in a product/service area...network building and people-skills
- Tolerance for ambiguity
- Perseverance
- Passion / vision
- Optimism

Teaching/Learning Entrepreneurship

- Traditional instruction
 - Textbook readings
 - Problem sets with single correct answers
 - Written or scantron exams/quizzes
- Entrepreneurship = ultimate open-ended design problem
 - finance, marketing, management, intellectual property, ethics, engineering, teamwork, communication, issues related to society and sustainability

PBL Philosophy

- What learners do in a course determines:
 - what they will learn
 - how well they can recall it
 - conditions under which they can use it in the future
- What instructors do in class is not as important as what they design for students to do.

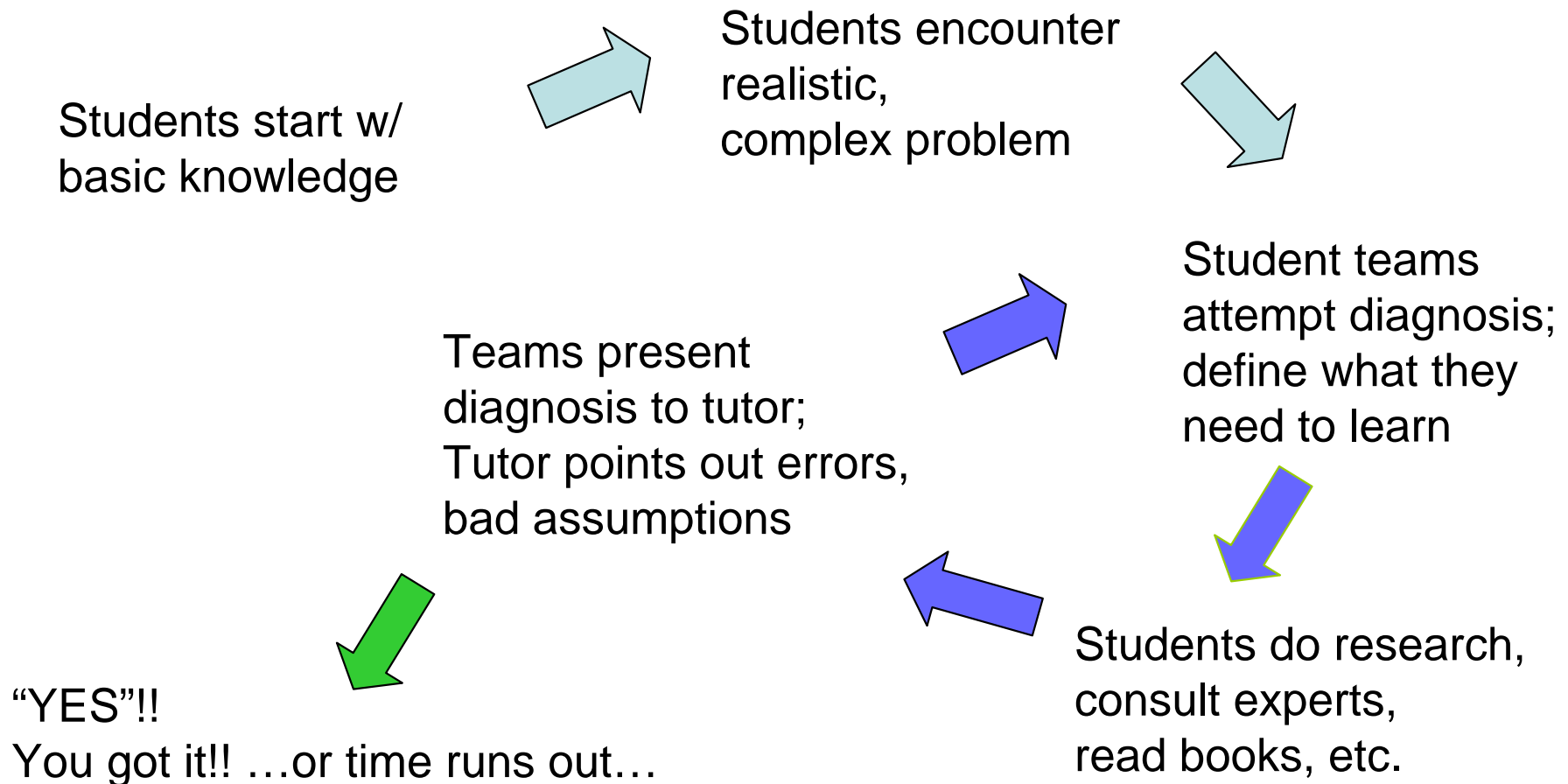
PBL Philosophy

- Information and knowledge recall:
 - creative, complex brain process
 - how we learn strengthens some memory networks and ignores others
- Traditional [chalk&talk lectures + testing] can cause students to learn important knowledge but it is not easy to recall.

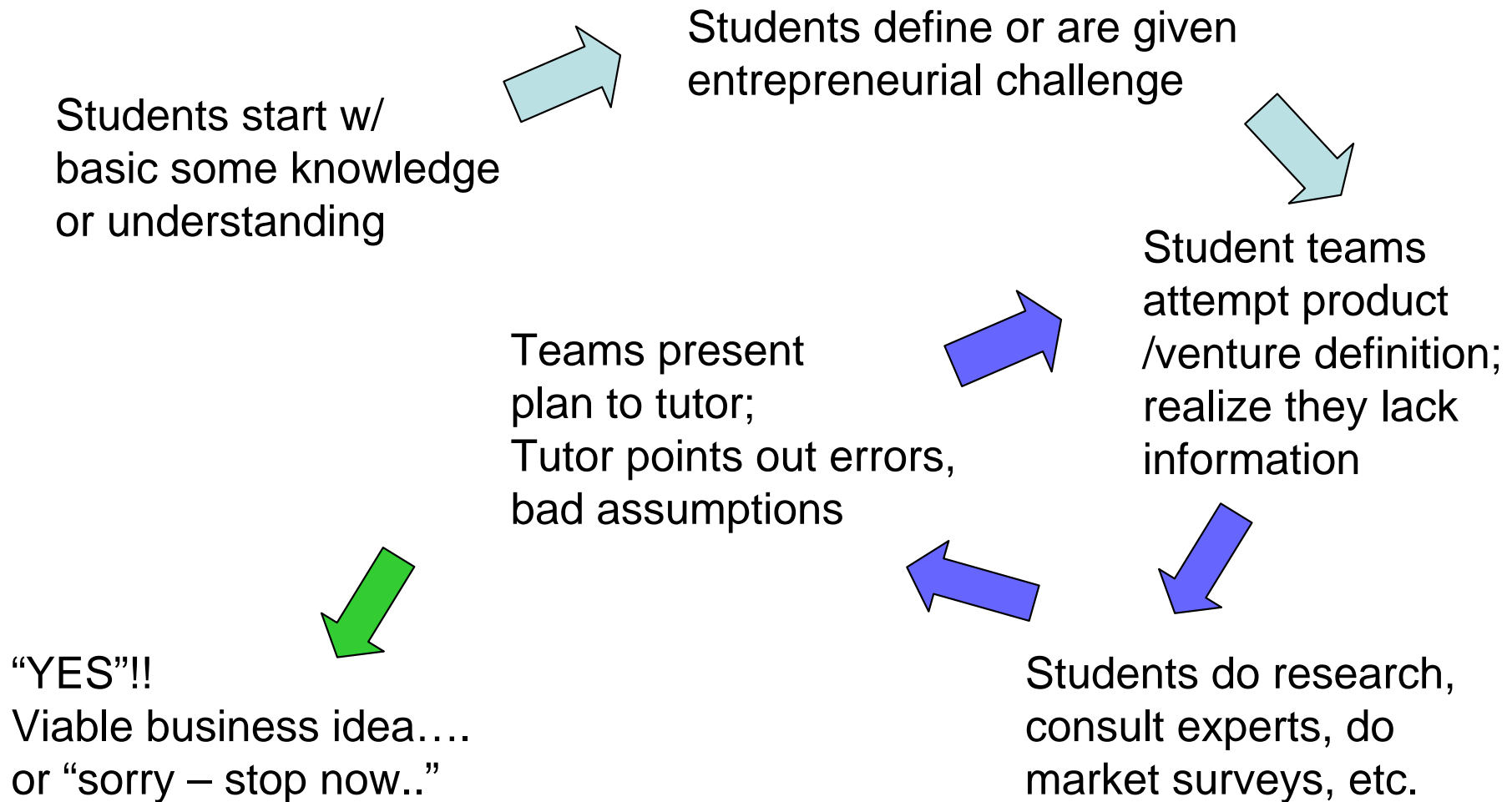
PBL Philosophy

- PBL hard for many students:
 - unfamiliar
 - requires greater student effort
 - requires students to take command of their learning
- PBL hard for many instructors:
 - unfamiliar
 - new teaching style: mentor rather than lecture
 - new grading rubrics
 - direct work with students

PBL – Medical School Model



PBL – Entrepreneurship



Entrepreneurship PBL

- Tutor's/Mentor's job:
 - ask provocative questions that guide further research
 - reduce dead end explorations
 - suggest resources
 - provide examples and give precise appraisals of performance



Research evidence that PBL learning is more effective than traditional learning methods

Interactive Engagement

Heads-on and hands-on activities

Traditional Methods

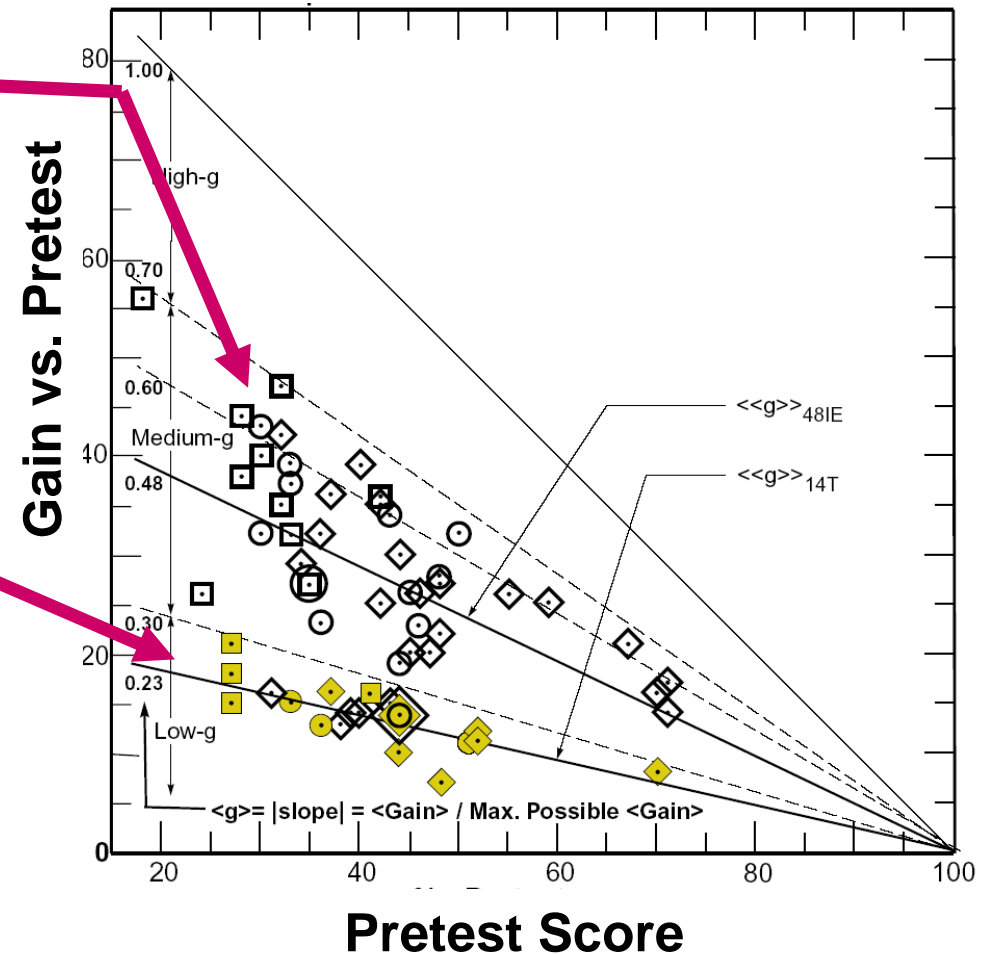
Passive-student lectures, recipe labs, algorithmic problem exams

Reference:

Interactive-engagement vs. traditional methods:

A six-thousand student survey of mechanics test data for introductory physics courses

by Richard R. Hake, American Journal of Physics, Vol 66, pp 64-74, 1998



Delaware Valley High School

- Nicole Matz
 - BA - Social Studies-Secondary Education
 - Masters in Special Education
- Classes so Far
 - 13 sections / 18 week terms
 - 28 students per section
 - 320 total students
- A few teams have launched companies, most go on to university

**PROBLEM-BASED LEARNING IN ACTION:
THE DELAWARE VALLEY HIGH SCHOOL.**

guide



Lessons





















-  Tentative Course Schedule Spring 2008 425 (497G) Section 1.doc
-  Business Library Website
-  Previous experiences
-  Introduction
-  Cases
-  Business Opportunity
-  Opportunity Evaluation
-  Intellectual Property
-  Competitive Analysis
-  Your Market
-  Business Model
-  Finance I
-  Finance II
-  Exit Strategy
-  Business Plan
-  Final Written Study and Final Presentation
-  Student Team IP
-  End_of_semester_team_and_self_evaluation.doc
-  Team and Self Evaluations
-  Entrepreneur Profiles DROPBOX



TABLE 1
Pre- and Post- Class Measures

Scale	Pre-class mean	Post-class mean	Statistic
Personal Comfort with Ambiguity	43.1412	44.9	($t_{(69)}=-3.193$, $p=.002$)
General Self Efficacy	35.5784	36.31428	($t_{(69)}=-1.563$, $p=.123$)
Perceived Feasibility	14.3714	14.9571	($t_{(69)}=-2.437$, $p=.017$)
Perceived Desirability	11.2714	11.3571	($t_{(69)}=-.4500$, $p=.654$)
Entrepreneurial self-efficacy	55.4285	60.1428	($t_{(69)}=-6.662$, $p=.000$)
Marketing	10.2571	11.2428	($t_{(69)}=-4.087$, $p=.000$)
Innovation	11.4714	12.3	($t_{(69)}=-4.341$, $p=.000$)
Management	12.4	13.0857	($t_{(69)}=-3.328$, $p=.001$)
Risk-taking	12.1142	12.8285	($t_{(69)}=-3.718$, $p=.000$)
Financial Control	9.1857	10.6857	($t_{(69)}=-5.365$, $p=.000$)
Intention to start	3.9428	4.0714	($t_{(69)}=-1.381$, $p=.172$)