

**Teaching Entrepreneurship to Engineering and Science Students:
Selected Quotes from Experienced Educators at Stanford University's
Stanford Technology Ventures Program (STVP)
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Rewards and Benefits

- It is my passionate belief that we can have the most dramatic educational impact on new high-growth company formation tomorrow by teaching technology students today.
- The educational benefit of what we teach extends beyond startups to include intrapreneurial innovation in established companies as well. We have tremendous potential to impact economic growth in America by teaching those with ideas how to put them into context.
- Scientists and engineers form the backbone of technological creation in our society and represent the core of creative energy that allows us to lead the world in productivity and standards of living.
- Engineering students are very smart and pick up material very fast. For many of them, this is the first "business" class they've ever taken, and it opens up a new world of possibilities.
- The students are so bright and motivated. They know that they will be entrepreneurs in the future and are desperate to prepare themselves for this challenging path. They know that they need the skills and knowledge we are teaching, and they absorb the material with enthusiasm.
- The students are hungry for practical business skills, are diligent workers, are appreciative, and are genuinely open to learning. They feel tension about their career path and are eager to explore the options available to them.
- It is more challenging to teach students with little or no prior knowledge of business. That being said, the potential to inspire technical students to act on their entrepreneurial instincts outweighs any additional teaching burden.
- We teach potential innovators to use the tools of commerce to pursue opportunities consistent with their passion and craft. We explore the workings of entrepreneurship to develop leadership and independent thinking.
- Observing the alumni return and articulate how their perspectives were changed, and watching them demonstrate the skills they finessed while in the program makes all the hard work pay off.
- Engineers and scientists are extremely altruistic. They would rather change the world than get rich quick. They demonstrate incredible generosity and their work ethic is remarkable. Engineers and scientists will walk through walls to solve a problem.

Risks and Challenges

- The risk that concerns me most is that of encouraging creative students to desert their technical or liberal arts education to pursue financial returns. It is important to teach entrepreneurship as a conceptual and practical social science rather than as pre-professional training. Putting entrepreneurship and business in the context of innovation and creativity emphasizes its relevance to their broader education.
- Such training is not easy and it takes dedication from practitioners who wish to mentor the next generation. Institutions like Stanford must continue to foster environments that encourage this mentoring, even though direct financial support from industry may not always be there.
- These students come with many fixed assumptions about measurement and outcomes, and it has been fun to try to rock some of those ideas. The diversity of backgrounds of the students in each classroom is particularly helpful for the engineers.
- Engineers and scientists sometimes lack a foundation in basic finance and accounting - but they learn fast if you give them a primer. They often don't know the basic language of business - but pick it up faster than most business people pick up technology terms.
- I think the challenge is to get away from pure war stories and to give the students advice based on actual evidence. This is always a struggle as good companies do all sorts of bad things, and bad companies do good things.
- Entrepreneurship is inherently risky. By teaching it, we are enticing young people to work long hours, to devote themselves to their companies rather than to loved ones, and to entice others to join them, even though most new companies fail. It is a safer life to join a big company, although perhaps less exciting and with a lower upside. Professor Emeritus Jim March of Stanford is eloquent on this point:

"Unfortunately, the gains for imagination are not free. The protections for imagination are indiscriminate. They shield bad ideas as well as good ones—and there are many more of the former than the latter. Most fantasies lead us astray, and most of the consequences of imagination for individuals and individual organizations are disastrous. Most deviants end up on the scrap pile of failed mutations, not as heroes of organizational transformation. There is, as a result, much that can be viewed as unjust in a system that induces imagination among individuals and individual organizations in order to allow a larger system to choose among alternative experiments. By glorifying imagination, we entice the innocent into unwitting self-destruction (or if you prefer, altruism)."

- We only give them introductory information ... a taste of entrepreneurship. If we are not careful, they could potentially go into a real-world setting with the over-confidence that they can handle any situation without continuous learning.

Note: For more information on this subject and STVP, please visit our <http://stvp.stanford.edu>. Your comments are welcome. Please send them to Professor Tom Byers (tbyers@stanford.edu).