https://www.youtube.com/watch?v=HM-E2H1ChJM
“From learning about entrepreneurship to learning to be entrepreneurial?”

Nothing less than a Copernican revolution in entrepreneurial learning is unfolding before us.
"Think about how a traditional MBA program would educate piano players: they would give lectures, they would hand out syllabuses, the would have written exams and progressive programs would have group work on presentations on how to play a piano – wow. But can anyone really play a piano after enjoying (?) the program?“  -Helge Löbler
Entrepreneurial Mindset: How to Better Understand, Measure & Change Entrepreneurial Thinking?

Changing the deep beliefs in the entrepreneurial mindset

Norris Krueger, PhD
Senior Research Fellow,
Center for Management & Entrepreneurship
School of Advanced Studies, University of Phoenix
• How many published articles on the impact of entrep education on learners.. don’t suck? (Guess %)
• Nabi, et al., AMLE 2017

• Research shows a ridiculous absence of domain knowledge
• Worse, ask yourself how many biz profs have ANY training?
• Practitioners are WAY ahead.
• Fertile ground for research projects well-versed in how humans learn (developmental psych, cognitive developmental, etc.
• Thus opportunities for collaboration between business and education scholars.
• Better still...opportunities in practice!
• We know best-in-class processes/methods to grow entrepreneurial thinking; why do few schools step up?
• Whether undergrad or adult ed, why not UOPX?

• Why not UOPX?
• **#1.** We assume that the “mindset” reflects deep cognitive phenomena, particularly deep beliefs and assumptions.

• **#2.** These only change through transformative learning experiences.

• **#3.** We believe that a useful way to view mindset-change is helping learners move from a more *novice* mindset toward a more *expert* mindset.
• Oversimplifying “slightly”, transformative learning follows the constructivistic model of learning that focuses on changing how we structure the knowledge we have and acquire (versus the behavioristic model that focuses on acquiring factual knowledge.

• Note, however, that deep cognitive changes are quite difficult to measure directly.

• But promising research has begun to assess mindset change pre/post (wish me luck)
## Evolution of education

<table>
<thead>
<tr>
<th>Key Focus of Pedagogy</th>
<th>Key Assumption</th>
<th>Example of Key Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher -centered</td>
<td>Teacher transmits to passive students</td>
<td>Memorization (lectures on entrepreneurial facts)</td>
</tr>
<tr>
<td>Teaching -centered</td>
<td>Recognizes learning as a process</td>
<td>‘Skills &amp; Drills ’ (e.g., writing business plans)</td>
</tr>
<tr>
<td>Learner -centered</td>
<td>Learners have ‘ownership’ of learning</td>
<td>Case studies (e.g., assessing business plans)</td>
</tr>
<tr>
<td>Learning -centered</td>
<td>Learning is situated, students &amp; teacher alike</td>
<td>Problem-based learning (e.g., self-managed field projects)</td>
</tr>
</tbody>
</table>
Novice \(\rightarrow\) Expert

Novice Entrepreneurial Mindset \(\rightarrow\) change in knowledge content \(\rightarrow\) Expert Entrepreneurial Mindset

change in knowledge structure

Critical Developmental Experiences
• WHO are we changing?
  – Target audience/learners

• WHAT are we trying to change?
  – What IS this “mindset” anyway?
  – How do we measure it?

• HOW do we make that happen?
  – From learning about entrepreneurship to BEING entrepreneurial?
Research/Publications

2017 Outstanding Paper, Emerald Literati awards
2017 print publication in Academy of Management Learning & Education (A)
Accepted paper, 2017 Babson Conference (A+)
Keynote address on entrepreneurial mindset, Dubai
Academy of Management PDW: future of research on entrepreneurial intentions
AoM PDW on making entrep/innov research more useful for practice & policy
Invited chapter on the future of research on entrepreneurial intentions
NSF grant proposal to advance research on entrepreneurial ecosystems
Grant proposal: structured literature review on the entrepreneurial mindset.
Invited expert, all-star Paris conference on future of entrepreneurship research
Doctoral defense examiner, University of Twente, Netherlands
Handbook of Research Methodologies & Design in Neuro-Entrepreneurship (Elgar)
ResearchGate (>50K reads), SSRN (top 2%), G-Scholar (h-index 26, >11K citations)
Education
Keynote address on experiential entrepreneurship education, Tokyo.
Continuing efforts as Senior Subject Matter Expert for OECD
Proposed MOOC/blended course on lean startup for Main Street.
Developing webinar on how to raise kids to think entrepreneurially.

Outreach/Entrepreneurship
Mentor/mentor recruiter for Idaho National Lab's LabCorps (I-Corps)
Nominee, Executive Director, Trailhead (leading co-working space)
Webinar course on growing entrepreneurial ecosystems
Woody biomass integrated campus for rural development
Teachers take a central role and transfer their knowledge directly to students through presentations.
Current Mindset Projects: Empirical

- Validation Study for Current Protocol [new grant]
- In-depth Systematic Lit Review [rejected grant ;) , revising]
- OECD (Entrepreneurship360, HE Innovate)
- EU/EC: Coneeeect
- EntrepComp
Current Projects: Growing Mindset in Practice

- **NSF grant proposal** to SBIR to implement assessment

- **Course module development** for “Lean Startup Main Street” led by UOPX/SAS alumnus – could be EASILY deployed by UOPX

- Collaboration proposal for “best & brightest” entrep _educators_ – mini-conference, community-building

- **USDA grant for rural entrepreneurial development program**

- **Additional foundation grants in progress**
How can I help YOU to help grow a more entrepreneurial world?

Norris.krueger[at]gmail.com
@entrep_thinking
Facebook
LinkedIn
+1 208 440 3747 / WeChat / WhatsApp /Skype

More mindset links: http://goo.gl/ERpjEa
(backup slides)
Inputs

• Issue 5: How skilled/experienced are the instructors?

• Issue 5a: Do they need to share the entrepreneurial mindset (or deeply understand it)?

• Issue 6: Are learners already “entrepreneurial”? And are programs taking those differences into explicit consideration?

• Issue 6a: Again, does the institutional setting (and norms) matter?

• The “HOW”?
• Issue 3: How experiential is the curriculum?
• Issue 3a: Is it truly experiential or merely “hands on”? 
• Issue 4: Does the organizational setting impede or support experiential learning? 
• Issue 4a: Context (e.g., primary, secondary, vocational, inside or outside formal education institutions)?

• The “HOW”? 

Throughputs
Outputs

• Issue 1: How is “entrepreneurial mindset” defined? Can we provide a rigorous definition?

• Issue 2: How is “mindset” measured? Do we need to develop a protocol for assessment?

• Issue 2a: Is “entrepreneurial mindset” measured at all? (and... does “one size fit all”??)

• The “HOW”?
So what IS this “entrepreneurial mindset”? 

• Learning ABOUT entrepreneurship (content) 
  Versus? 
• Learning to BE/THINK entrepreneurial (mindset) 

  ANY Mindset.... 

• Deep cognitive structures – deep anchoring assumptions 
• Intent, yes, but potential 
• Novice -> Expert
Can we map outcomes to throughputs?

• Can we assess what facets/markers of the entrepreneurial mindset are influenced by which activities? ...and/or....

• Can we identify a desired outcome then identify how to measure it... Then design an exercise to change it?

• What about different “flavors” of entrepreneurship?

• What would a robust mindset protocol that serves multiple target populations look like?
Research Opportunities

• Antecedents
  – Impact of teaching/training methods
  – Impact of instructor characteristics (e.g., mental models)
  – Impact of context (including students)
  – Developmental experiences?
Implications: Research

• Focus on expert entrepreneurial thinking
• Focus on emotions
• Focus on cognitive change
• Focus on deep cognitive change
• Take advantage of:
  – Multi-disciplinary approaches
  – New tools – theory & method
• Take advantage of... us
“Greatest Hits” of Educational Research

• Humans like to learn; humans are good at it!
• Lesson Plans Help 😊 [think I->T->O]
• Action Changes Brains... with the right support
• Cooperative Learning
  – “Jigsaw”
• Flipped/inverted
• Authentic Questions
• You Get What You Measure
• Mindset not Surface Knowledge
  – Critical developmental experiences
  – Problem-based learning
  – Non-cognitive >> cognitive
Implications: Teaching

• Need to be constructivistic
• Need to understand entrepreneurial thinking
• Need to understand expert thinking
• Need to address deep beliefs
• Instructor MUST understand – or share-the expert mindset.
Why Ecosystem Matters So Much? And...

• Brad Feld’s “Startup Communities”
  1. Bottom-up, entrepreneur-led
  2. Inclusive (broad and deep)
  3. Rallying points
  4. Long-term process

What GEM and GEDI tell us:
  1. Human capital
  2. Social capital

Master list of ecosystem links: http://goo.gl/v0YIIX
Entrepreneurial Thinking?

Specific Desirabilities

Perceived Desirabilities

Propensity to Act

Perceived Feasibility

Perceived Self-efficacy

Intentions
Lessons of Entrepreneurial Experience?

- Novice
  - Change in what we know (content)
    - Entrepreneurial Mindset
      - Change in how we know it (knowledge structures)
        - Change in Deep Beliefs
          - Critical Developmental Experiences
  - Expert
Accelerating Learning

• Problem-Based Learning ("authentic" questions)
• Two overlapping themes?
• IMMERSION – Action before thinking
• MENTORING – Learn the right lessons
  – Expert mentors
  – Peer mentors

  – Or THREE? Ecosystem that supports all of this?
    – Social infrastructure; cognitive infrastructure
Best programs in the world? What do THEY do?

- Virtually none are university-based but...
  - Chalmers, Stanford, Aalto...
  - Venture creation programs
- Don’t incubate, accelerate?
  - Startup Weekend
  - Lean startup
  - TechStars, et al. /Global Accelerator Network
  - Y-Combinator /500 Startups /etc.

VET: [www.NACCE.com](http://www.NACCE.com)
So what IS this “entrepreneurial mindset” anyway?

• Thoughts? Which are the hardest to change?
  – (More important for here... what can we measure?)

Seeing opportunities?
• Innovativeness (presumably discontinuous)
• Resilience to adversity/optimism
• Persistence at goal-directed behaviors
• Domain-specific self-efficacy (possibly general self-efficacy)
• Role identity (mental prototypes)
• Entrepreneurial intensity
• Tolerance for ambiguity and uncertainty; Risk-aversion (lower)
• Future orientation (ability to delay gratification?)
• Entrepreneurial behaviors (not just launching a venture)
• Entrepreneurial intentions
• Value creation (versus opportunism) / Market orientation
• (Can we go deeper? Working memory? Cognitive complexity? Etc.)
• But what about…. Narcissism? Other ‘dark side’ issues?
Keys to constructivistic learning

• Authentic Questions; Big Questions
• Co-Learning

• Personal reflection
• Peer support (peer mentoring)
• Expert mentoring (need a chess master!)
• Skilled facilitator

• Immersion in experience
• Co-immersion in ecosystem
Behaviorism vs Constructivism

• Yeats?
• Behaviorism?
• *Epictetus*??
• Social learning
• Situated learning
• Existential learning