Habits of Entrepreneurial Mindset

This is the engineer we need: One with an entrepreneurial mindset that is coupled with engineering thought and action, expressed through collaboration and communication, and founded on character. Engineers with an entrepreneurial mindset transform the world. Educators have a role in developing this mindset in the rising generation of engineers.

The above statements are being adopted by a growing number of higher education institutions with engineering programs, particularly in this age of rapid change and engineers' consequential role in shaping our shared world and human flourishing. Technical skills, professional skills and character formation are all important components of engineering education. An entrepreneurial mindset (EM) is also imperative, aiming skills at opportunity recognition, evaluating impact and creating value for others. It has the power to transform the way students think, enhance technical excellence, and change entire career trajectories.

The KEEN Framework is the source document that provides a roadmap for educators, using the 3Cs of curiosity, connections and creating value to define EM. Engineering faculty and leaders who strive to instill an entrepreneurial mindset in their programs' graduates are finding needed online resources and community on EngineeringUnleashed.com.

The Habits of Entrepreneurial Mindset supports the KEEN Framework and can be used to introduce the 3Cs concepts to a broad audience.

A **mindset** refers to a set of internal framings, attitudes, awarenesses, dispositions, habits and values that help us navigate our complex, interconnected world. An **entrepreneurial mindset** is a subset of these mental attributes focused on discovery and exploration, innovation and impact, value creation and scale, as well as personal drive and initiative.

The Habits of EM

- **Curiosity**: Habits that fuel exploration, challenge assumptions, and reveal opportunities.
- **Connections**: Habits that integrate different perspectives, ideas, and systems to drive innovation and impact.
- **Creating Value**: Habits that drive actions to deliver meaningful outcomes that benefit others at scale.

Those introducing EM to a new audience may need to clarify what EM and the 3Cs represent. For example:

- If an instructor asks students to be **demonstrably curious about something**, is that developing EM? Yes, if the activity contributes to habits that fuel exploration about our changing world, challenge assumptions, or reveal opportunities.
- If an instructor helps students routinely make **connections from theory to application,** is that developing EM? Yes, if the activity contributes to habits that drive innovation or evaluate impact.
- Do educational experiences alone count as **creating value** for students? No, successful engineers must have a mindset centered on creating value for others.

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While habits can be developed individually, they are reinforced in combination. Faculty and students will naturally be strong in some and not others, but the important thing is understanding that EM can be developed through intentional practice. Introductions to the 3Cs might start with exploring which attributes resonate with individuals and why, or discussing which concepts are well covered in your engineering programs and which need additional attention.

- **Curiosity:** Habits that fuel exploration, challenge assumptions, and reveal opportunities.
  - Inquisitiveness: Applies curiosity about our continuously changing world.
  - Contrarian Thinking: Explores alternative or disruptive views of current or accepted solutions.
  - Opportunity Seeking: Identifies trends and unmet needs to uncover new opportunities.
  - Experimentation: Constantly experiments and iterates to test new ideas and explore what-ifs.
  - Confronting Ambiguity: Fearlessly operates with care in complex and uncertain environments.
  - Future-Minded: Considers emerging trends in people, systems, and environments.
- **Connections:** Habits that integrate different perspectives, ideas, and systems to drive innovation and impact.
  - Creativity: Integrates information from disparate sources to spark new ideas.
  - Systems Thinking: Recognizes interdependencies in systems and identifies leverage points.
  - Knowledge Synthesis: Combines ideas, information, and experiences to form new understanding.
  - Implications Thinking: Anticipates the long-term impacts and consequences of actions.
  - Strategic Thinking: Develops long-term strategies with clear milestones.
  - Risk Awareness: Proactively incorporates risk management into decision-making.
- **Creating Value:** Habits focused on delivering meaningful outcomes that benefit others at scale.
  - Value Awareness: Focuses on solutions where extraordinary value can be created.
  - Customer-Centric Thinking: Frames efforts in terms of stakeholder's actual needs.
  - Impact Thinking: Seeks outcomes that produce meaningful and scalable benefits for others.
  - Socially Minded: Prioritizes creating meaningful and positive societal impacts.
  - Persistence: Maintains a sense of agency and resilience to achieve goals in the face of obstacles and failures.
  - Resourcefulness: Solves problems creatively with available resources.

In summary, the KEEN Framework is the source document for the engineer we need: One with an entrepreneurial mindset that is coupled with engineering thought and action, expressed through collaboration and communication, and founded on character. Engineers with an entrepreneurial mindset transform the world. Educators have a role in developing this mindset in the rising generation of engineers.

This document is a tool to be used in concert with the KEEN Framework and content on EngineeringUnleashed.com to introduce engineering educators to entrepreneurial mindset.