



Learning Objectives for Michigan State University's Undergraduate Entrepreneurship Programs

According to the Network for Teaching Entrepreneurship¹, parents, educators, researchers and policymakers have all become skeptical of standardized tests as the sole barometer of student achievement. The University of Chicago recently announced that standardized tests will no longer be required for applications to the University and other universities are following suit. Lately K-12 and higher ed have seen a wave of new thinking about the skills that students need to be successful.

There is growing interest in identifying and measuring critical “noncognitive” skills, such as grit, conscientiousness, goal orientation, and others.² Research shows that these skills are predictive not only of academic achievement but also future success in the labor market.³

In the context of entrepreneurial education, these skills are an important mosaic of noncognitive skills known as *the entrepreneurial mindset*. The entrepreneurial mindset is comprised of skills like initiative, adaptability, communication, critical thinking and problem solving—skills that help people overcome challenges, identify and make the most of opportunities and succeed in a variety of settings.

The whitepaper published by the Network for Teaching Entrepreneurship, “On-Ramp to Opportunity,”⁴ presents evidence about the entrepreneurial mindset to make several important and related points:

- Entrepreneurial thinking is an essential 21st century skill and a key contributor to academic and career success.
- The entrepreneurial mindset is a malleable characteristic that can be taught and learned.
- The entrepreneurial mindset is valued by employers. In today’s economy, entrepreneurial skills are employment skills.⁵

After considerable thought, research, deliberation and discussion, we at Michigan State University have adopted these principles, borrowing heavily from NFTE, as our guidepost.

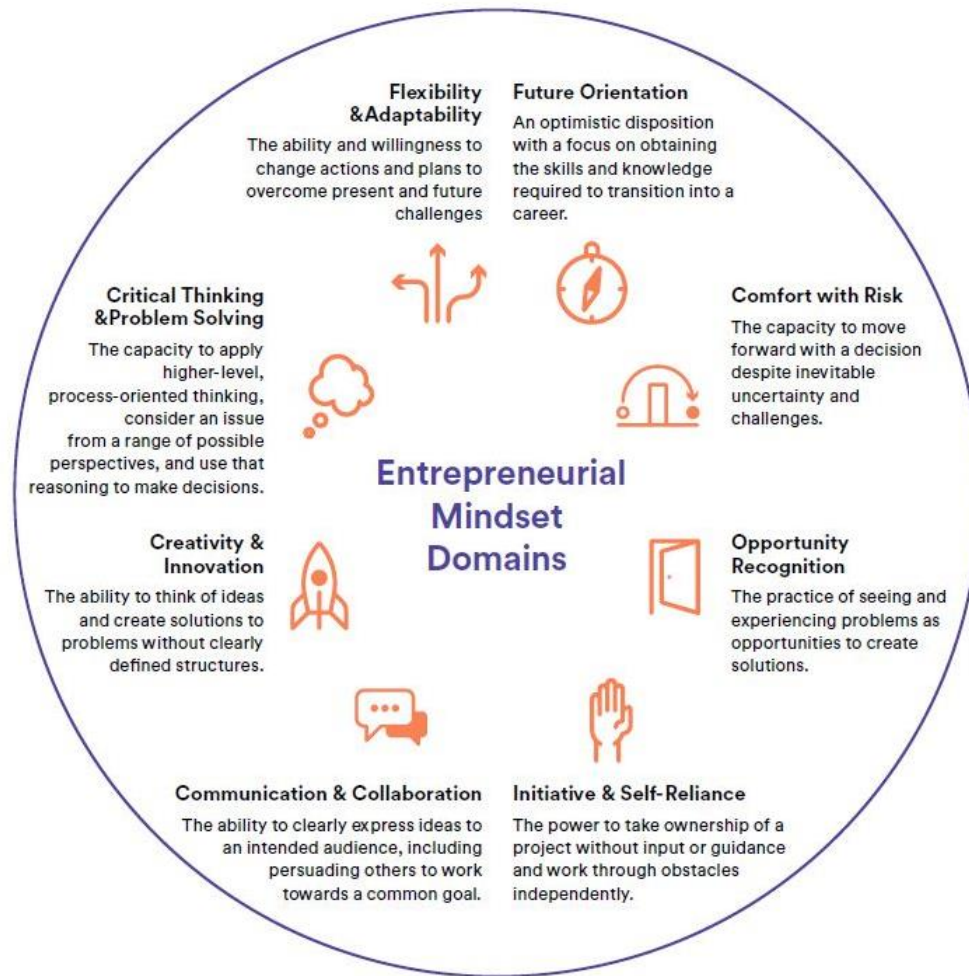
¹ We are deeply indebted to the [Network for Teaching Entrepreneurship](#) for significant portions of this document.

² Lipnevitch and Roberts 2012; Farrington 2011.

³ Kautz et al. 2014

⁴ http://www.nfte.com/wp-content/uploads/2017/08/On-Ramp-to-Opportunity_final.pdf

⁵ <http://digital.graphcompubs.com/article/Entrepreneurship+Empowers+Students+With+Career+Readiness/2763554/400785/article.html>



The Entrepreneurial Mindset

The entrepreneurial mindset is, simply, the way an entrepreneur thinks and acts. At its core, the entrepreneurial mindset (EM) is a set of characteristics, behaviors and skills that drive action. A person with an entrepreneurial mindset recognizes an otherwise overlooked opportunity, develops the confidence to take a risk, communicates their ideas clearly, and can adjust to and learn from setbacks. The term entrepreneurial mindset embodies a set of cross-functional life and professional skills that describe someone who is innovative, resourceful and creates value.

When we teach entrepreneurship, the emphasis is never about starting businesses, but we encourage it for those students who are passionate about doing so. The entrepreneurial mindset can be applied in many contexts. It applies to employees in large, hierarchical entities, and it applies to community organizers, academics, inventors, doctors, politicians, musicians and public servants. In no way is it unique to startup companies nor is it unique to for-profit ventures. Social innovators (or social entrepreneurs), who focus on social change, must possess the same set of characteristics to be successful.

The NFTE has developed a scale to measure the entrepreneurial mindset. Their Entrepreneurial Mindset Index (EMI) measures eight core domains they have identified as critical to becoming entrepreneurial. These domains are:

1. Opportunity recognition
2. Initiative and self-reliance
3. Communication and collaboration
4. Creativity and innovation
5. Critical thinking and problem solving
6. Flexibility and adaptability
7. Future orientation
8. Comfort with risk.

The Association of American Colleges & Universities reports in their 2013 National Survey of Business and Non-Profit Leaders⁶ that nearly all employers surveyed say they give a hiring preference to college graduates with skills that will enable them to contribute to innovation in the workplace. Their report goes on to describe attributes of employees that employers value, and although they sometimes use different terminology, the skills and traits they describe are very similar to the domains of the entrepreneurial mindset as described by NFTE.

Management Skills

Developing an entrepreneurial mindset is not always sufficient to become a successful entrepreneur. Since we also have students who aspire to become entrepreneurs, and because we support them in these pursuits, we note other attributes that are needed to cultivate this select group of students into successful entrepreneurs. These are the managerial skills that entrepreneurs must possess.⁷ We emphasize that these skills are distinct from having developed an entrepreneurial mindset.

- Optimizing the use of scarce resources
- Ensuring effective leadership
- Motivating employees
- Having a winning strategy
- Developing people
- Building a productive organization
- Beating or outflanking the competition.

While the overall objective of the undergraduate entrepreneurship and innovation program is to develop in all students the entrepreneurial mindset, some students may also develop their skills as an entrepreneur.

Learning Objectives

The context and the domains above provide the scaffolding for the learning objectives of the entrepreneurship and innovation programs at MSU. Specifically, students should develop the following skills, approaches, and characteristics in the core courses of the Undergraduate [Minor in Entrepreneurship and Innovation](#):

CAS/AL 114: Creativity and Entrepreneurship

- Familiarize students with creative processes and brainstorming tools.
- Engage students in thinking creatively and in fostering and facilitating creativity with others.
- Equip students with failing forward and learning to learn habits of mind.

⁶ <https://www.aacu.org/leap/presidentstrust/compact/2013SurveySummary>

⁷ <https://www.entrepreneur.com/article/283135>

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- Engage students in critical thinking and analysis, especially in contexts of “creative” projects and creativity.
- Foster connections between creativity, innovation, and entrepreneurship.

BUS 190: The Art of Starting

- Learn to recognize the characteristics and behaviors of individuals who are entrepreneurially minded and gain insights as to how to acquire those characteristics and behaviors.
- Explore entrepreneurial interests and aptitudes (their own and others’).
- See entrepreneurship as a viable lifestyle and career choice.
- Understand basic venture creation principles and methods.
- Recognize area entrepreneurial networks and entrepreneurial service providers.
- Develop the concepts and skills required to start, manage, and grow a new venture.

All courses

Courses that are electives in the minor should support students in developing the following skills, approaches, and characteristics:

- Flexibility and adaptability: ability and willingness to change actions and plans to overcome present and future challenges
- Future orientation: optimistic disposition with a focus on obtaining skills and knowledge required to understand possible futures with sustainability at the center
- Comfort with risk: capacity to move forward with a decision; ability to overcome uncertainty and challenges and learn from one's mistakes
- Opportunity recognition: ability to see and experience problems as opportunities; understanding the differences between ideas and opportunities; orientation toward problem-identification and solution creation
- Initiative and self-reliance: ability to take ownership of an idea and to see input or guidance as appropriate
- Communication and collaboration: ability to clearly express ideas to an intended audience, drawing upon the appropriate means, technologies, and resources to do so
- Creativity and innovation: ability to think of ideas and create solutions to problems without clearly defined structures
- Critical thinking and problem solving: capacity to apply higher-level, process-oriented thinking; consider an issue from a range of perspectives; and use that reasoning to make decisions.

This list is discipline agnostic; the content or disciplinary area in which this knowledge is developed is not as important as the fact that these skills, approaches, and characteristics be developed with an entrepreneurial orientation in mind.

Connecting Entrepreneurship to MSU Learning Goals

As a land grant university, Michigan State is focused on the creation of students who are capable of being engaged citizens who can make a positive difference in the world around them.⁸ To reach this objective, MSU has identified five core categories for undergraduate learning goals.⁹

- Analytical Thinking
- Cultural Understanding

⁸ <http://president.msu.edu/advancing-msu/msu-mission-statement.html>

⁹ <http://undergrad.msu.edu/programs/learninggoals>

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- Effective Citizenship
- Effective Communication
- Integrated Reasoning

These traits are all parts of a mindset, rather than specific skills taught in classes. One does not, for example, take a course on effective citizenship or integrated reasoning. Rather, over time, experiences and knowledge gained through courses and extracurricular activities build towards an understanding of how one's actions impact the world around them and how complex ideas and facts connect to make meaning. The Entrepreneurial Mindset, described earlier, links to each of MSU's undergraduate learning outcomes—sometimes directly, and sometimes indirectly. In the table below, these links are explored in greater depth.

Entrepreneurial Mindset Domain	MSU Learning Goal(s)	Entrepreneurship students will...
Critical Thinking and Problem Solving	Analytic Thinking	Learn to analyze and correlate data from multiple sources and iterate on viable solutions.
Opportunity Recognition	Cultural Understanding	Seek new markets through understanding needs in specific cultural contexts and empathizing with customer problems.
Initiative and Self-Reliance	Effective Citizenship	Gain awareness of how the government can act as a driver for entrepreneurial activity. Be encouraged to act as active agents of change within their communities.
Communication and Collaboration	Effective Communication	Learn effective communications skills, both for determining customer needs and communicating value to customers. Work extensively within teams and with additional partners.
Future Orientation	Integrated Reasoning	Imagine what the future could hold and create solutions leading towards that future.
	Effective Citizenship	Face global “wicked problems” that cross many stakeholder boundaries and have no singular solution.
Creativity and Innovation	Integrated Reasoning	Integrate technical facts and cultural details to determine the context within which the solution is to be deployed.
	Effective Communication	Develop creative solutions by collaborating as group and communicating with potential customers.
Flexibility and Adaptability	Integrated Reasoning	Adapt their ideas and challenge their preconceptions through active engagement with customers and other stakeholders.
Comfort with Risk	Integrated Reasoning	Learn about risk from both the investment standpoint as well as from an inventor's point of view and explore what threshold of risk is acceptable to them.

The goal of both the MSU Learning Goals and the growth of an entrepreneurial mindset converge to enhance the potential for students to be effective leaders and life-long learners. It is unlikely that the university will provide students with all the specific skills they will need to solve the world's problems in coming decades as many of those skills do not yet exist. However, an entrepreneurial mindset combined with strong analytical, cultural, and communication skills will enable students to learn what is required for their success outside of the confines of their undergraduate degree. Problem solving as an entrepreneur requires identifying the problem through customer interaction, researching existing/creating new solutions to the customer's problem, creating a plan for deploying the solution, and having a deep understanding that the solution devised may require many iterations before its final success or failure. This process is similar in form whether it applies to the development of a product on a startup team, working within an existing company on an existing product, operating in the

political sphere, or creating and sharing works of art. Regardless of the path an MSU student takes after leaving the university, their chances of success will be improved by embracing the entrepreneurial mindset.

Below, we introduce some of the specific competencies and approaches that are currently valuable tools/skills and best practices within entrepreneurship as a practice and within entrepreneurship pedagogy. We believe incorporating these competencies and approaches to entrepreneurship learning environments at MSU will have a profound impact on how successful students are at growing an entrepreneurial mindset and developing proficient or exemplary abilities with regards to the broader undergraduate learning goals.

Example Competencies

- The Business Model Canvas – A method for mapping out how a company functions and why it exists.
- Project budgeting – the rudiments of financial statements and start-up costs.
- The ability to test the feasibility of new ideas and concepts.
- Customer discovery—the ability to identify a target market and interview people in that segment to learn of their beliefs, preferences and needs.
- Presenting/pitching ideas, public speaking, and handling questions.
- Working in a group.
- Creative collaboration through structured brainstorming and design activities.
- Develop a sense of empathy—the ability to see issues/problems through someone else’s eyes.
- Tolerating ambiguity and making decisions when the data is unreliable or missing.
- The ability to work with partners and communities using an asset-based approach.

Recommended Approaches

- An active learning orientation
- Collaborative projects
- A variety of communication modes (*e.g.*, written, oral presentation, digital delivery)
- Connect to real world problems
- Interact with groups across campus and outside of campus
- Applying these concepts in other countries through education abroad offerings
- Applying these concepts in a community engaged learning and/or social innovation mode
- Internships
- Hands on, project-based learning with a digital or physical “product”
- Interdisciplinary collaboration between STEM and humanities
- Capstone projects
- Activities which integrate MSU’s student incubator, The Hatch.

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