THE ONE HOUR ENTREPRENEURSHIP EDUCATOR

Play and Gamification in Entrepreneurship

BABSON COLLEGE

Babson Academy for the Advancement of Global Entrepreneurial Learning

About the Series

The One Hour Entrepreneurship Educator is a free webinar series from the No. 1 school for entrepreneurship (*U.S. News & World Report*) that gives you access to Babson's accomplished faculty members—along with actionable teaching tools, research-based insights, and peer-to-peer connections around the world. We've collected inspiring insights and practical tips from the webinars of three top faculty members in this issue.

What You'll Learn

How we teach is just as important as what we teach. In this issue, you'll learn how to help students develop an entrepreneurial mindset and practice entrepreneurship content at a deep level through play in the classroom, simulations, and gamification. This will help them think and act more entrepreneurially in everything they do. Let's play!

Five Practices of Entrepreneurship Education

1. Play
2. Empathy
3. Creation
4. Experimentation
5. Reflection

Heidi Neck, Jeffry A. Timmons Professor of Entrepreneurship and Academic Director of the Babson Academy for the Advancement of Global Entrepreneurial Learning, has developed a framework for educators to help students unleash their entrepreneurial mindset. Heidi shares more about these practices in her lesson on "The Power of Play" and gamification.

SPRING 2023

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FACULTY THOUGHT LEADERS

MATT ALLEN

Associate Professor of Entrepreneurship Director of the Center for Engaged Learning and Teaching

Matt Allen is a global expert in family entrepreneurship. Awarded the Poets&Quants' Best Undergraduate Business Professors for 2020, Professor Allen's research has been widely published in outlets such as the *Harvard Business Review* and *Personnel Psychology*. He also consults for family businesses worldwide.

HEIDI NECK

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Heidi Neck was awarded Entrepreneurship Educator of the Year by USASBE (2022). She also established the Babson Collaborative, a global membership organization for colleges and universities seeking to grow entrepreneurship education, which was awarded the IIE Andrew Heiskell Award for Innovation in International Education in Strategic Partnerships (2022). She has trained over 4,000 faculty in teaching entrepreneurship.

KEITH ROLLAG

Professor of Management

Professor of Management Keith Rollag is an award-winning author and teacher with a focus on organizational behavior, teamwork and leadership, newcomer socialization and training, organizational culture, and more. He has published articles in outlets such as *Harvard Business Review, MIT Sloan Management Review,* and *International Journal of Management Education,* and his research has been featured in places like *The New York Times,* NPR, and Forbes.

HOW NEUROSCIENCE CAN INFORM ENTREPRENEURSHIP EDUCATION

Babson Academy
Entrepreneurship Expert

MATT ALLEN

Associate Professor of Entrepreneurship and Faculty Director of the Family Entrepreneurship Amplifier Program and Family Learning at Babson College, Matt Allen is a global expert in family entrepreneurship and is fluent in English and Spanish. Awarded the Poets&Quants' Best Undergraduate Business Professors for 2020, Professor Allen's research has been widely published in outlets such as the *Harvard Business Review, Personnel Psychology,* and *Entrepreneurship Theory and Practice.* Professor Allen also consults for family businesses and has worked with global consultancies including the Family Business Consulting Group, Lansberg and Gersick, and Banyan Global Family Business Advisors. He worked as a financial analyst at both IBM and Hewlett Packard before entering academia.

Neuroscience gives educators direct insights into how people behave and learn. The powerful imaging technologies that are now available enable us to study the brain in real time while it works—not just after a traumatic event.

How Are Memories Made—And How Does This Impact Teaching?

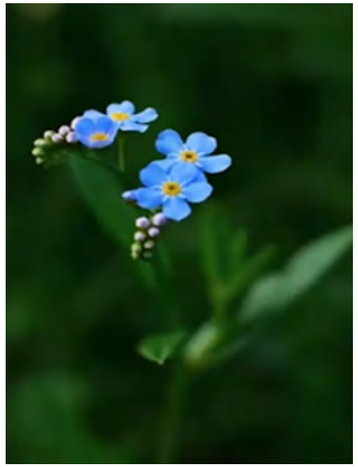
Forming, encoding, and retrieving a memory is a complex process that impacts different areas of the brain. Understanding this process allows us to have more impact as educators.

Groundbreaking Example of the Complexity of Memory

Henry Molaison (Patient HM), 1926–2008

- **Incident:** As a child, HM was in a bicycle accident that caused epileptic seizures.
- **Surgery:** To address these seizures, HM underwent a brain surgery in which two-thirds of his hippocampus (responsible for memory) was removed.
- **Discovery:** As a result, he was no longer able to create new memories. He did retain most of the memories that were encoded before his surgery. He could also build new skills and capabilities, but he struggled to remember that he had them.

This discovery changed our understanding of memory. We used to see memory as one photograph stored in one location, but it's more like one photograph ripped into 100 pieces and stored in 100 different file cabinets in your brain.



How Memories Are Encoded: Forget-Me-Not

Question: Do you know what kind of flower is pictured here?

Answer: Forget-Me-Not

Considerations: What stands out to you about this image? Consider the different aspects of this memory you may be incorporating:

1. **Factual memory:** Name of the flower and any factual knowledge about it
2. **Visual memory:** Seeing the flower, experiencing its colors, etc.
3. **Emotional memory:** What does seeing this photo and hearing this name evoke? Do you perceive it as beautiful? Poetic? Do flowers evoke any emotions or other memories for you?

How Understanding Memory Can Improve Entrepreneurship Instruction: Use Multiple Modes and Methods

1. **Embrace Different Learning Styles**
   We know that the brain encodes memories in different ways, so providing multiple modes of learning (visual, auditory, reading, writing, and kinesthetic) will deepen the understanding.
2. **Use Curricular and Cocurricular Approaches to Entrepreneurship**
   Learning expands beyond the classroom. Entrepreneurship should be taught within a dedicated course and in other courses, from philosophy and literature to science and engineering. This results in complex learning.

KEY TAKEAWAY

Cocurricular and multimodal approaches utilize more parts of the brain and result in higher levels of learning.

Understanding Cognitive Bias to Develop Better Entrepreneurs

Cognitive bias may sound negative (and it can be!), but it is also simply a necessary part of the learning process. Helping students understand what it is, why we do it, and how to overcome it will empower them with more objective insights.

Our Brains Crave Order and Reason—And Sometimes They Create It

Examine the following paragraph:

"Aoccdrnig to rscheearch at Cmabrigde uinervtisy, it deosn't mttaer waht oredr the ltteers in a wrod are, the olny iprmoetnt tihng is taht the frist and lsat ltteres are at the rghit pclae. The rset can be a tatol mses and you can sitll raed it wouthit a porbelm. Tihs is bcuseae we do not raed ervey lteter by it slef but the wrod as a wlohe."

Most likely, you are able to read the above paragraph despite the reordering of the letters in each word:

"According to a researcher (sic) at Cambridge University, it doesn't matter in what order the letters in a word are, the only important thing is that the first and last letter be at the right place. The rest can be a total mess and you can still read it without problem. This is because the human mind does not read every letter by itself but the word as a whole."*

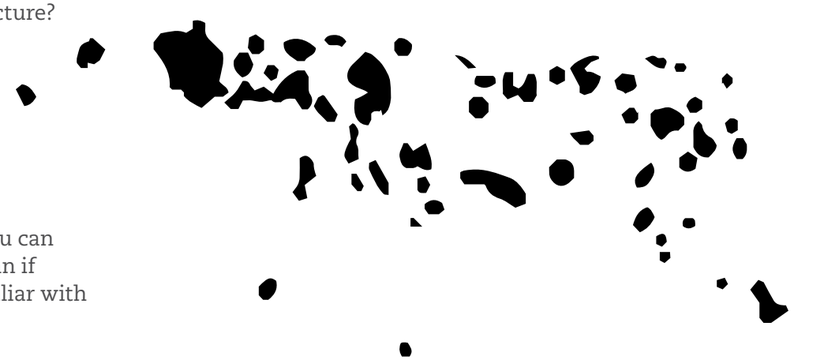
*Keep in mind that the above paragraph is a little mental exercise and not to be read as exact science. For more information on the brain's ability to read scrambled text, you can read this explanation by Matt Davis at Cambridge University.

KEY TAKEAWAYS

1. You have to understand what you're encountering in order to encode memories. When you encounter something disordered, your brain works to fill in the gaps to create order.
2. Your current base of knowledge and experience impacts what you see as "ordered." So important to remember when conducting market research!

Our Base of Knowledge Impacts How We Construct Order

Question: What do you see when you look at this black-and-white picture?



Possible answers: Dog, dalmatian, archipelago, etc.

Considerations: You can only see a dalmatian if you're already familiar with this breed of dog.

Dismantling Cognitive Biases in Entrepreneurship with Inductive Learning

1. **Take an Inductive Approach**
   Allow students to figure things out on their own. What they learn for themselves will be more deeply encoded than what they are told.
2. **Push Them to Gather External Data**
   Send your students to the market and help them overcome their biases as they interpret their observations.
3. **Provide Constant Feedback**
   You need more than one trip out into the market to overcome your biases.

Teaching Entrepreneurship

As teachers of entrepreneurship, we are trying to get students out into the market to truly understand customers' needs. While they may go out and collect actual observations, they will then bring the observations back and interpret them, at which point they are likely to add their own personal cognitive biases. Our job as educators is to help students overcome these biases to be better entrepreneurs.

Inductive Learning Exercise:
MBA Project Interviews with People Who Fit Customer Profiles

Send students out to interview potential customers about their entrepreneurial idea. Then have students present their idea, including the results of the interviews as a component of the presentation. Typically, the process will unfold as follows:

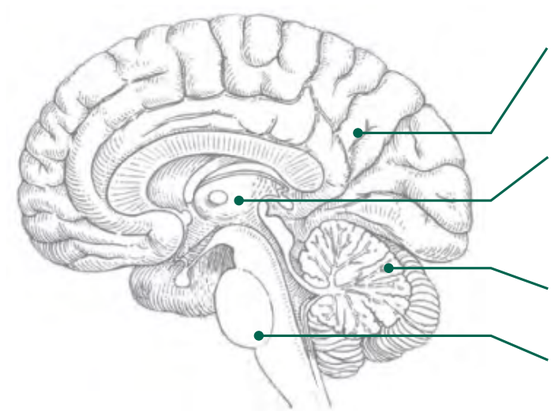
- In their presentation, students say the interviewees provided some negative feedback about the project or idea.
- Students then move forward to their next slide, discussing their idea.
- As an instructor, ask your students how they took this feedback into account to adjust their ideas.
- Students usually indicate they have not adjusted their idea but instead assume they didn't talk to the right people.
- Send your students back to the market to talk to more people and incorporate their feedback.

» **Outcome:** This process will help students check their assumptions/biases and understand they need to refine their ideas.

Teaching Entrepreneurship

Overcoming cognitive biases may be especially challenging—and therefore beneficial—for students coming from areas of study where explicit knowledge is emphasized, such as engineering, math, etc.

Understanding the Parts of the Brain to Create Lasting Entrepreneurial Learning



Cerebral cortex
the logic center of the brain where we retain information and make logical conclusions or assumptions

Limbic system
where we process emotions; this is believed to be the most "primitive" part of the brain; it controls our fight-or-flight response and functions much faster than the cerebral cortex

Cerebellum
controls motor skills and what we see

Brain stem
connects our body to our brain

KEY TAKEAWAY

Memory is encoded in different ways depending on where it's processed:

Cerebral cortex/ explicit memory: Declarative, conscious, deliberate, logic driven, and based on facts and times

Limbic system/ implicit memory: Subconscious, instinctive, related to skills and abilities, conditioning, associations, and emotions

Encoding memories across different areas of the brain makes for deeper understanding. Successful entrepreneurship education helps students balance logic and emotion.

Teaching Entrepreneurship as a Mindset

Considering what you've learned, do you see classroom learning as explicit or implicit learning? (If you're leaning toward explicit, you're right!) Yet entrepreneurship as a practice and mindset favors a more implicit approach, focusing on skills and capabilities and incorporating explicit knowledge as a secondary component. This is contrary to many disciplines.

KEY TAKEAWAY

Explicit memory is more powerful when it is encoded with emotion—when it also touches implicit memory.

Fostering Transformative Entrepreneurial Learning

To create truly new knowledge or to change mindsets, you'll need to leverage both implicit and explicit learning. This is a transformative approach to learning.

1. Disorienting Dilemma
2. Reflection
3. Exploration/ Experimentation
4. Reintegration

Source: "Transformative Learning Approaches," Mezirow (1991)

Teaching Entrepreneurship

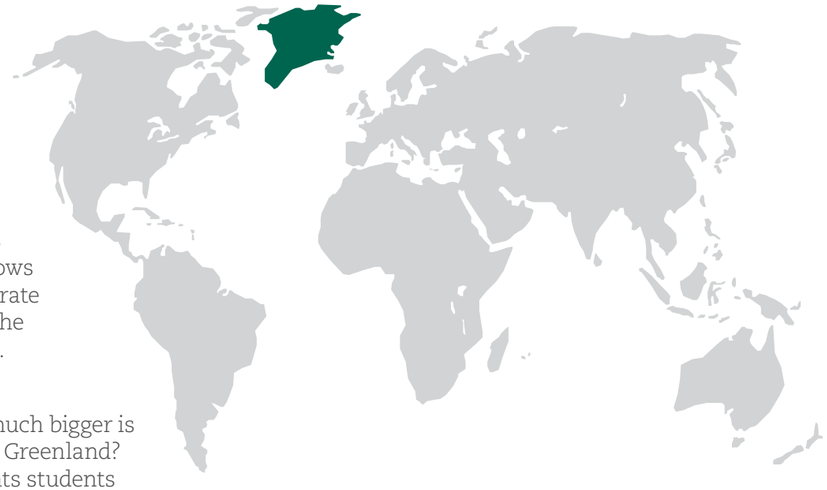
If a student says "I'm not creative," or "I'm not an entrepreneur," the only way to change their perception is through implicit learning and associations: help them experience creativity and entrepreneurial thinking so that they can form new implicit memories and see themselves in a new way.

Create a Disorienting Dilemma for Your Students

Create a situation that throws your students off so much that they have to rethink the problem at hand and check their biases. This will help them see things in a new way and create new implicit and explicit memories that bring order to the disorienting information they just experienced.

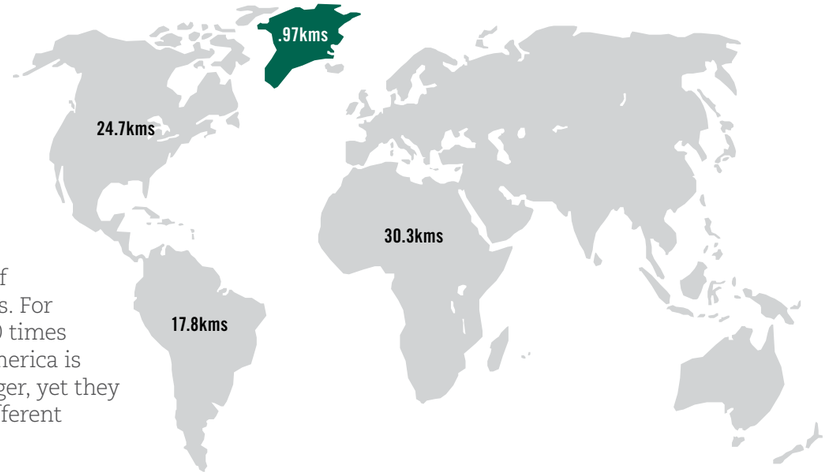
Example of a Disorienting Dilemma

1. Start with a map; ask which country is highlighted. This allows students to demonstrate explicit knowledge: the answer is Greenland.



2. Ask students: How much bigger is North America than Greenland? This question presents students with a Disorienting Dilemma. On the map, Greenland is quite large. This may conflict with some students' previous knowledge.

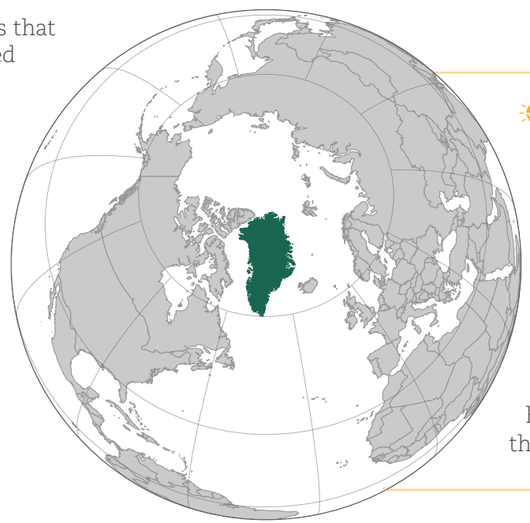
3. Provide them with the measurements of respective continents. For example, Africa is 30 times larger, and North America is roughly 25 times larger, yet they don't appear very different in size.



4. Explain to students that the map is distorted when the globe is flattened; the poles have to be stretched to make the drawing.

5. Show students the globe map.

6. Note how Greenland is suddenly more proportional.



KEY TAKEAWAY

The key to transformative learning is to combine implicit and explicit learning through experience. As the educator, you are the guide, bringing explicit knowledge to their experiences and helping them reinterpret their implicit knowledge.

Review:

Try These Methods to Strengthen Entrepreneurship Education with Neuroscience

1. Memories live across different parts of the brain. Use multimodal and cocurricular methods to engage multiple areas of the brain for meaningful entrepreneurship learning.

2. Cognitive bias is normal and stems from limited experience; develop lessons that get students to use inductive learning, external data, and looped feedback and reflection to help them see beyond their biases.

3. Teach entrepreneurship as a mindset and practice, building implicit learning (experiences, feelings, associations) into your curriculum.

4. Complement implicit learning with guided explicit learning to help students achieve meaningful lessons and memories.

5. Provide opportunities for Disorienting Dilemmas to facilitate transformational learning.

WEBINAR 2

THE POWER OF PLAY IN ENTREPRENEURSHIP EDUCATION

Academic Director of the Babson Academy
Jeffry A. Timmons Professor of Entrepreneurship
Faculty Director of Inspire Studio

HEIDI M. NECK

Award-winning author, educator, and consultant Heidi Neck has been recognized by many organizations, most recently by USASBE as Entrepreneurship Educator of the Year (2022). Her work as the Academic Director of the Babson Academy builds on her establishment of the Babson Collaborative, a global membership organization for colleges and universities seeking to grow entrepreneurship education, awarded the IIE Andrew Heiskell Award for Innovation in International Education in Strategic Partnerships (2022). Neck has trained over 4,000 faculty around the world in teaching entrepreneurship.

Now that we've discussed how important inductive and implicit learning experiences are for transformative learning in entrepreneurship, we can understand how play can be an important component of entrepreneurship education.

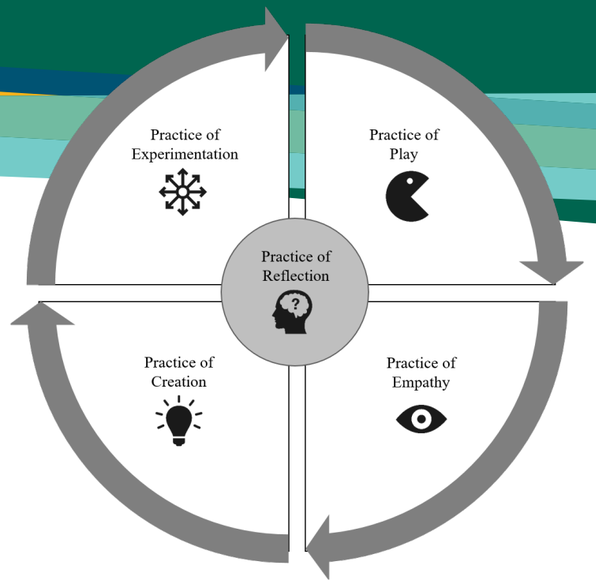
Resources

The Elusive Role of Play in Entrepreneurship Education

By Heidi M. Neck, Elissa Grossman, Doan Winkel & Jeffrey Stamp

Teaching Entrepreneurship: A Practice-Based Approach (Volumes 1 & 2)

Edited by Heidi M. Neck, Candida G. Brush & Patricia G. Greene



Five Practices That Guide Educators in Teaching Entrepreneurship

1. Help students create new products, services, and processes.
2. Help students develop empathy for customers to better understand their needs.
3. Help students experiment, test hypotheses, and understand the iterative nature of building a business and bringing new ideas to the market (iterations, not failure).
4. Help students develop a reflective process; since everything we do in entrepreneurship is so experiential, we need to give students time to practice reflection and codify their knowledge.
5. But what about play?

Why Play in the Classroom Matters in Entrepreneurship Education

You may wonder if play is appropriate to a higher education setting. How can a highly ranked college such as Babson emphasize play? How can that be "serious" learning? When we think of play, we typically think of children. As adults, we typically experience play as "tourists"—it's seen primarily as a chance to visit "memory lane" and nothing more. We're missing out on the potential of play to help us continue to develop as adults.

Consider the (Entrepreneurial) Benefits of Childhood Play

- Enhanced cognitive development
- Increased executive function
- Creative thinking
- Improved language skills
- Self-regulation
- Short- and long-term academic achievement
- Motivation
- Well-being

Heidi Neck, 1971, Baton Rouge, Louisiana, USA

Questions to Ask Yourself as an Entrepreneurship Educator

- Do your students report that your classroom/course has a playful or fun environment?
- Do they play games as part of the coursework?
- Do they experience any game mechanics (e.g., earning badges or points for completing challenges)?
- Do you use situations or other means for students to be fully immersed in entrepreneurial activities?

The more you answer "yes," the more playful your classroom will be.

Many Words Associated with Play Are Ideal for Entrepreneurship Education:

Keep the Continuum of Play in Mind When Structuring Entrepreneurial Learning

Sociodramatic Play
(pure imagination)

Functional Play
(using our environment—helps us explore senses, body, objects, etc., to learn how they work)

Constructive Play
(creating and building something from what we have in our environment)

Games with Rules
(conforming our behaviors to follow a set of rules that hopefully leads us to success)

Note that not every type of play will fall so neatly into place on the continuum. For example, you can have sociodramatic play that incorporates some rules.

Interesting Discoveries About the Role of Play

- Play facilitates exploration not of what something is in concrete terms but what that something can become (Hjorth et al., *Organization Studies*, special issue on the intersection of organizational creativity, play, and entrepreneurship, March 2018, issues 5–6).

  Stoplight Analogy: We all know green means go and red means stop, but does yellow mean slow down? Speed up? It's an open dynamic event with transformative powers. The question isn't "What is it?" the question is "What can it become?"

- The allure of play in traditional settings is that it feels unconventional—a lot like rule breaking (Corpasson & Younes).

  Think of entrepreneurship educators and students as the "cool kids" of business. We tend to be more rule breakers than our counterparts, and play appeals to us.

Resource: Professors at Play

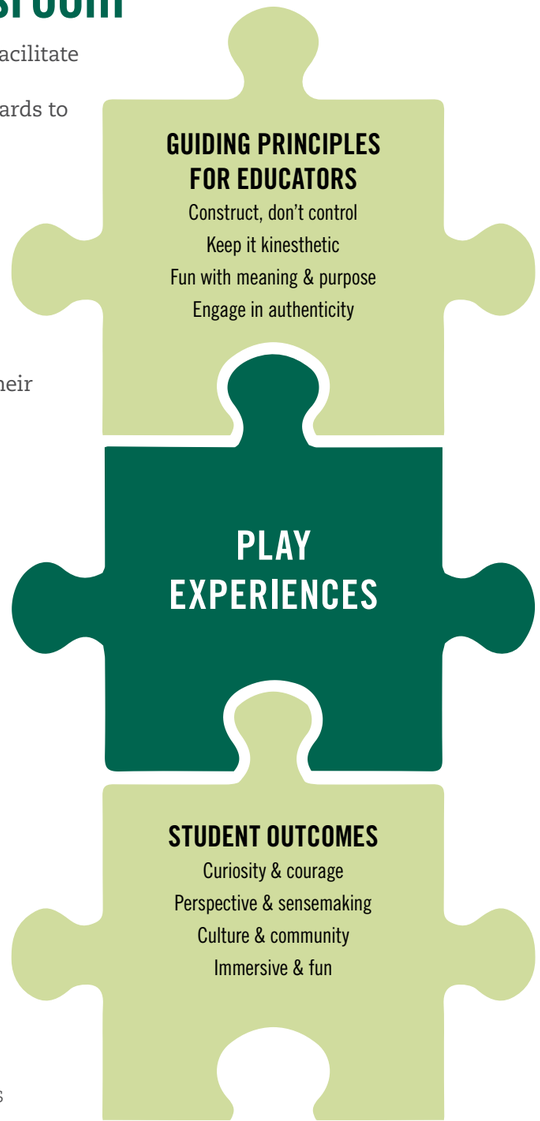
Play is more fun with friends! Join the Google Group of professors from many different disciplines to talk about play in higher ed and get connected with new research!

Join Professors at Play

A Practical Philosophy of Play for the Entrepreneurship Classroom

- A well-constructed experience for your students can facilitate meaningful learning; as a trade-off, you'll need to be prepared to "lose control" of the classroom a bit in regards to planning out the exact timing of activities.
- Kinesthetic learning can be done in person or online; discussions are still passive; think of ways to get students moving and using multiple senses.
- It's easy to confuse silliness with effective play; stay focused on connecting playful content to the purpose of the course.
- Construct your game in a way that allows students to be themselves—they should be encouraged to bring their own perspectives to the role instead of acting out those of others.

Source: Neck, Grossman, Winkel & Stamp



Context Over Content

Some content may not fit into your lesson, now that you have a looser timeline. That's okay! Content is a commodity. Students can digest it in many formats outside of the classroom. Think about the most important points you want your students to internalize and prioritize giving context to those in the classroom.

Understanding Gaming for Entrepreneurial Learning

All games involve play, but not all play is gamified. Games have rules, winners, and losers. Understanding gaming can help us leverage play effectively in the classroom.

Some Key "Players" in Gaming and Entrepreneurship Education

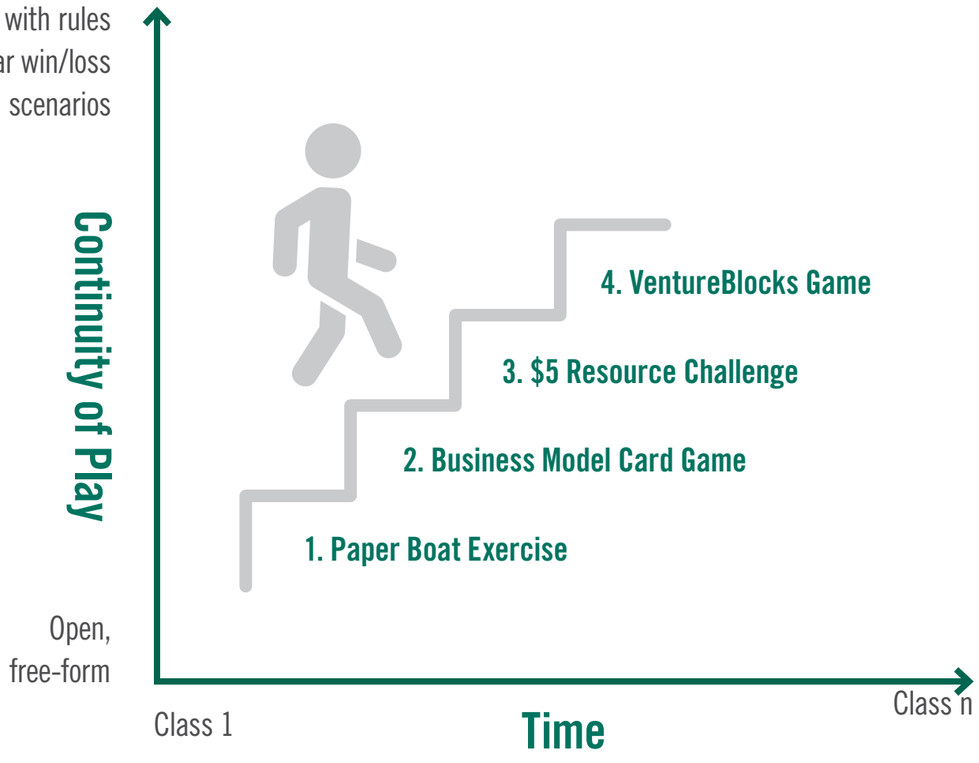
Here is a short list of some popular games (and their creators!) used in entrepreneurship education.

- Lego Serious Play® (Johan Roos & Bart Victor)
- Food Truck Challenge (Michael Roberto)
- The Startup Game (Ethan Mollick)
- GoVenture (a company)
- VentureBlocks (Anton Yakushin & Heidi Neck)

Move from Open Play to Rules-Based Play in an Entrepreneurship Classroom

Remember the continuum of play? Before you ask students to tackle difficult challenges, you can warm them up with "free" or "open" play—play that involves lots of creativity and very few rules. Then you can move them toward more structured rules-based play.

1. Paper Boat Exercise: Helps students reconnect with their inner child—important for entrepreneurs!
2. Business Model Card Game: Helps students set priorities for their entrepreneurial process
3. $5 Resource Challenge: Implements more rules and structure; students turn $5 into as much profit as they can within a set time (example: 2 hours)
4. VentureBlocks Game: Brings game mechanics and video game design into the classroom



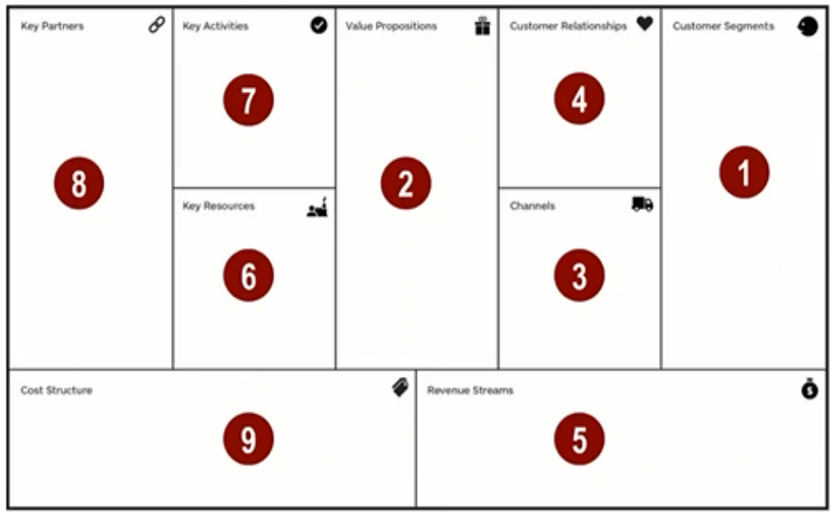
Example of Gamifying a Concept: Business Model Card Game

Osterwalder & Pigneur have set the following priorities in entrepreneurship:

Ask yourself: Do I want my students to simply memorize these? Or is it more important for them to have a deep understanding of what they are and how they work together in different scenarios?

To deepen students' understanding beyond a memorized list, you can gamify this concept:

1. Provide each group of students with a complete deck of cards made up of these nine components (unnumbered).
2. Task them with placing the cards in order of priority (1 most important, 9 least important).
3. Give them a time limit.
4. During the last minute, have them post their order for everyone to see.
5. Discuss!



» **Outcome:** Students will have conversations about what each component is, how it interacts with the other components, and what makes it a priority (or not). They will be deepening their understanding during the activity. Note this inductive learning will root more deeply in their memory, as Matt Allen noted in his lesson, "How Neuroscience Can Inform Entrepreneurship Education."

After the activity, discussion allows for further deepening and understanding of nuances. This is how you incorporate explicit learning as well. The true order is revealed, but it is less important than the understanding behind it. Students are immersed.

When you fold the ordered canvas up and open it again, the right side is about generating value and the left is about creating efficiency to generate that value; students will see that we want to focus on the value-creating activities first.

Example of Playing a Game to Practice and Learn Content:

VentureBlocks, built by Heidi Neck and Anton Yakushin, is a simulation game where students interview strangers in a new market to identify their needs and new opportunities.

Try VentureBlocks with Your Students

Play VentureBlocks, created by Babson expert Heidi M. Neck and her colleague Anton Yakushin, with up to 15 of your students for free. Visit ventureblocks.com/sign-up and use referral code: **BABSONPLAY23**. Good through June 30, 2023.

Seven Principles of Game-Based Learning

There are seven guiding principles to successful game-based learning. Consider how the previous two examples embody these seven principles.

1. Everyone participates
2. It poses a challenge
3. Students learn through action
4. Feedback is immediate and ongoing
5. Failure is a learning opportunity—iteration!
6. Socially and conceptually interconnected
7. It's fun/engaging

Source: Quest to Learn/Institute of Play

Review:

How to Use Play to Strengthen Instruction in Entrepreneurship

1. When teaching entrepreneurship, remember to move through a cycle of practicing empathy, creation, experimentation, play, and reflection.
2. Advocate for play in the entrepreneurship classroom, as the benefits of play align with the work of building an entrepreneurial mindset.
3. Keep the continuum of play in mind, and practice strategic escalation (from open play to rules-based play) of types of play/games.
4. Construct (but don't control), use kinesthetic approaches, facilitate fun with meaning and purpose, and encourage students to be their authentic selves.
5. Practice the Seven Principles of Game-Based Learning.

WEBINAR 3

DESIGNING GAMES AND SIMULATIONS TO AMPLIFY LEARNING

Professor of Management

KEITH ROLLAG

Keith Rollag is an award-winning author and teacher with a focus on organizational behavior, teamwork and leadership, newcomer socialization and training, organizational culture, social networks, and leadership development. He has published articles in outlets such as H*arvard Business Review, MIT Sloan Management Review, Organizational Dynamics, International Journal of Management Education,* and *the Journal of Innovative Education.* His research and thoughts have also been featured in places like T*he New York Times,* NPR, Fast Company, Forbes Inc., and Fortune. Prior to obtaining his PhD in Industrial Engineering from Stanford University, he was a product development manager at Procter & Gamble.

Now that we understand the neuroscience of memory—and how important inductive and emotional experiences are for learning—as well as the importance of play for creativity, it's time to design some games! Highly effective games and simulations don't have to be expensive or complicated. The simplest ones are often best. And the impact will be deeper learning in the entrepreneurship classroom.

How the Seven Principles of Game-Based Learning Play Out in Wordle

Just as Heidi Neck emphasized in her lesson on "The Power of Play," these seven principles make a wonderful guideline to build effective games and simulations.

Wordle, a simple online word game, is not very high tech or complicated. It was built by a software engineer as a fun way to pass the time with his girlfriend. She shared it with her friends, and three months later it had become so popular *The New York Times* bought it. It really jumped in popularity when the designer added the ability for players to post their daily results as emoji squares on social media. This made it more interconnected and fun!

Seven Principles of Game-Based Learning

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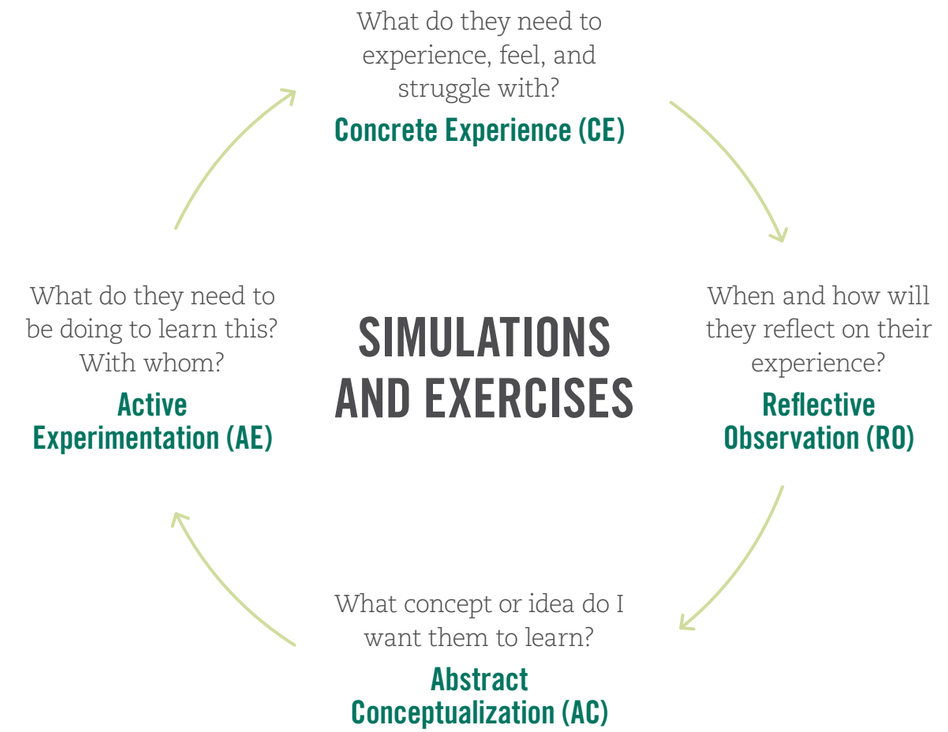
Source: Quest to Learn/Institute of Play

Using Kolb's Experiential Learning Model to Plan a Simulation

Many educators are likely familiar with Kolb's experiential learning model outlining Abstract Conceptualization, Active Experimentation, Concrete Experience, and Reflective Observation. This model can be used to frame the process of game design, as outlined here.



From Learning Objectives to Learning Actions

Think about what action you want students to take in reaching their learning objectives. This will impact how you design your activity.

ACTION	DESIGN IMPLICATION
Discovery	Misdirection Leading to an "Aha" Moment
Experience	Simplicity with Realism
Practice	Repetition with Feedback
Internalize	Action-Reflection-Action Loop

Example: In Need of Discovery

Theory X and Theory Y represent contrasting beliefs about what motivates people and how these beliefs impact a manager's style. Most people find themselves being motivated by Theory Y (attention, being valued, being asked questions), but they will often manage others in a Theory X way (punishments/rewards).

Getting students to discover that they think differently about others than themselves requires a misdirection around the activity topic (or a Disorienting Dilemma, to refer back to Matt Allen's lesson, "How Neuroscience Can Inform Entrepreneurship Education"). Only this can lead to an "aha" discovery. Without a misdirection, students will simply repeat what they *think* should be done.

Four Key Design Elements for Entrepreneurial Games

Action

What is the main task the participants need to be doing during the simulation to achieve your learning objectives?

- Decide
- Persuade
- Solve
- Trade
- Create
- Prioritize
- Calculate
- Build
- Rate
- Search

Roles

What are the minimum number and type of roles to make the primary action possible? Based on your primary action, what roles are needed to make this happen? Do you need or want teams?

- Boss/Subordinate
- Seller/Customer
- Leader/Follower
- Coach/Teammate
- Entrepreneur
- Builder
- Analyst
- Referee
- Creator
- Owner
- Criminal

Success Criteria and Rewards

What are the simplest success criteria and rewards that will lead the participants (in various roles) to act in ways that achieve your learning objectives?

- Time
- Ratings
- Points
- Quantity
- Profit
- % Share
- Interactions
- Votes
- Purchases
- Survival

Process and Rules

What is the simplest set of processes and rules to generate the kind of action, reflection, and learning that you want students to have? You will need to refine these over time as students try new ways to navigate the activity. Remember to keep it simple. As few as possible is ideal.

- Deadlines
- Margin of Error
- Internet Use
- Time Limits
- Information Sharing
- Number of Tries
- % Share
- Communication Methods
- Help and Resources
- Quantity
- Size

Questions to Ask as You Design Your Game or Simulation

1. If I were playing this game, what would I do? Is it what I want participants to do? Are there other ways? Is that good or bad? Do I need rules to prevent alternative strategies?
2. How can I simplify? What about the game is nice but doesn't really impact behavior and learning?
3. How does the game or simulation connect to the real world? Can participants see the connection?
4. Does it achieve my learning objective? Will participants learn what I want them to learn, or simply have fun?

Bringing the Design to Life—Example Game Improving Team Effectiveness

Google's Project Aristotle gave us some insights into what predicts team effectiveness.

DID NOT AFFECT	DID AFFECT
Team composition	Balanced participation in team conversations
Strong/weak leader	Equity in conversational turn-taking

Source: C. Duhigg, "What Google Learned from Its Quest to Build the Perfect Team," *New York Times Magazine* (2016)

Learning Objective

Help students become more aware of balanced participation and turn-taking in their project teams.

Action

The main tasks participants need to do to become aware of and sensitive to balanced participation and equity in turn-taking are:

- Conversing
- Achieving a team goal
- Tracking participation
- Tracking turn-taking
- Discussing and reflecting on the results
- Adjusting their communication behaviors

Consider: For your game or simulation, what should be students' primary task? In this case, it is adjusting their communication behaviors. Our game or simulation needs to give them the opportunity to do the thing multiple times so they can adjust.

Roles

The minimum number and type of roles to make the action of adjusting communication behaviors possible include the following:

- Teams
- No defined team roles that might dictate or influence the amount of participation
- How will the tracking be performed in an equitable way?

Consider: Will everyone track? Will we use technology?

Success Criteria and Rewards

To lead students to adjust their communication behaviors, we will use the following success criteria:

- Team-based competition
- Votes, time, quality, quantity
- Satisfaction of winning

Consider: Should we use a variety of criteria throughout the different repetitions to keep the game from feeling stagnant or boring?

Process and Rules

What is a simple yet effective way to track participation and turn-taking?

- Tabulating, taking a counting item, drawing, or time?

Consider: Consider the flow of the game when determining this. Tabulating every time they talk is not visual or easily shared. Taking a counting item every time they talk—for example taking an M&M out of a shared bowl—presents a similar issue.

To track balanced participation:

Use counting items. For example, you could give everyone five M&M's, and each time they talk, they must put one back into the bowl. When they run out, they can't talk anymore.

To record turn-taking:

Use drawing. For example, when you want to talk, you draw an arrow from the person talking to yourself (each student in the group has a personal color).

To facilitate balanced time:

Use egg timers. For example, everyone gets two minutes. When students aren't talking, the egg timer is sideways. When they run out of sand, they can't talk anymore.

Pick the Activity

Interestingly, the activity actually comes last—contrary to what might seem logical! The actual content of the activities doesn't matter for this learning objective. We just need to get students talking and establish ways they should track participation and turn-taking.

Possible activities include:

Funny photo captions

Toothpick bundling

Sticky-note tower building

Team-based memorizing

Remember to . . .

- Connect the steps of the activities back to the real world.
- Explain learning objectives clearly at the beginning of the game—unless misdirection is needed. For example, in an ethics simulation, you want students to engage in behaviors and then see if people cheat or not.

Review:

How to Make Easy and Effective Entrepreneurial Games

1. Keep games and simulations as simple as possible, while incorporating the Seven Principles of Game-Based Learning.
2. Use abstract conceptualization, active experimentation, concrete experience, and reflective observation to build simulations and games (Kolb's Experiential Learning Model).
3. Tie your learning objectives to specific actions.
4. Remember all four design elements should come before your actual activity: action you want participants to take to reach the learning objective, necessary roles, success criteria and rewards, and process and rules.
5. Only then can you design your activity!

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—**Richard Tunstall**
Associate Professor
& Academic Director of Enterprise
Leeds University, UK

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