

Innovating Education for Careers of the Future



A guide to teaching professional skills that prepare students for a rapidly changing world



Table of Contents

04 About this Module

05 CAPS Core Values

06 Designing Learning to Build Professional Skills

07 The Future of Work

11 Innovating Education

14 Steps, Insights and Tools

15 Prepare for the Student and Instructor Journey

39 Prepare Students for the “Real World”

63 Put Essential Skills to Work

80 Resources & Tools



While we are living in a time when the future of work is being reimagined, I reject the idea of a dystopian future projected by some in response to the current rapid growth of automation. These fears have followed each of the three previous industrial revolutions. Even with all the chaos, this is a wonderful time to be alive. The human element will continue to be an essential component of the new world of work. The jobs of the future will require a unique combination of both digital and human skills. Human skills are differentiators; they are why you get hired. Learning how to learn, becoming more adaptable, to have greater empathy, and the ability to collaborate in teams are skills that transcend disciplines. This mindset and these skillsets should be targets for education.

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About this Module

Get ready! CAPS is at the forefront of teaching and preparing students to adapt to a rapidly changing and unpredictable world. Recognizing that the workplace is on the cusp of a major evolution, CAPS instructors are rethinking pedagogies and focusing on competencies, skills, and character qualities—such as informed decision making, design thinking, creative problem solving, curiosity, and leadership—that will prepare students for the future no matter what the future looks like. CAPS is uniquely positioned to innovate education and develop these competencies and character qualities

through profession-based learning (Pro-BL) and other experiential learning situations. An innovative approach to education is deeply rooted in CAPS' DNA.

Innovating education takes some work! Grab some caffeine, sit back, and dig into this module. This module draws on the expertise and experience of CAPS Network affiliates (CAPS affiliates), community partners, and thought leaders to guide you and your team through thinking, planning, and designing your classroom to inspire lifelong learning.

Inside this Module

This module answers questions, offers guidance, and takes the mystery out of designing an innovative classroom to equip students with professional skills and to foster lifelong learning. Essentially, this module serves as your guide. You'll discover insights, best practices, resources, and tools to help steer your efforts.

Notice icons, which will draw your attention to very specific information you might be craving. Look for icons and headers when you want to get jumpstarted, gain peer insights, seek helpful tips, or locate a template or checklist for your task at hand.



Insight

CAPS affiliates and community partners share their experiences and best practices—from designing learning experiences to preparing students for the future of work and beyond.



Helpful Tip

Practitioners from around the country offer tips, advice, and best practices. In addition, you'll find recommended readings, links to articles, and other resources.

Action Checklist: An Action Checklist serves as a quick-start guide. Use the Checklist at the end of each section of Steps, Insights and Tools to dive right in and come back to the content later if needed.

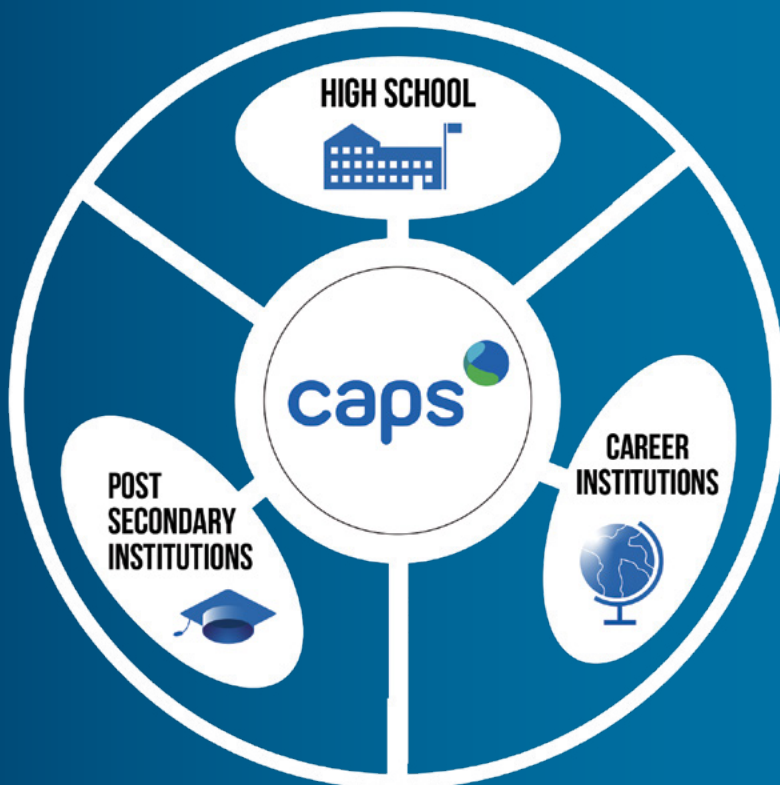
Resources & Tools: The Resources & Tools section at the end of this Module lists websites, videos, blogs, and other tools to make your job a little easier. Why reinvent the wheel, right?

Remember, this is a guide. A huge value of being a CAPS affiliate is the collective knowledge of ALL involved, so be sure to check out all of the Insights as well as the resources and tools located in the CAPS Network CO-LAB. Reach out to other CAPS affiliates. Direct questions or comments to the CAPS Network Coordinator. Visit yourcapsnetwork.org.

CAPS Core Values

Developing relationships with business, industry, and higher education partners is critical to the success of CAPS. The CAPS model is designed to create a rich and meaningful experience for both students and partners. CAPS can be successful in any community by committing to the following:

- **Profession-Based Learning:** Instructors develop real-world, project-based learning strategies through collaborations with business and community partners. These interactions enhance the learning experience, preparing students for college and career.
- **Professional Skills Development:** Unique experiences allow students to cultivate transformative professional skills such as understanding expectations, time management, and other essential business values. These skills are critical to providing students a competitive advantage in their post-secondary education and professional careers.
- **Self-Discovery and Exploration:** Students realize their strengths and passions by exploring and experiencing potential professions. This allows them to make informed decisions about their future while learning to exhibit leadership.
- **Entrepreneurial Mindset:** Instructors create an environment where creative thinking and problem solving is encouraged. An innovative culture is key to fostering entrepreneurial learning and design thinking.
- **Responsiveness:** CAPS supports high-skill, high-demand careers through ongoing innovation in curriculum development, programs, and services based on local business and community needs.



CAPS Innovation Model

The CAPS Innovation Model replaces the 100-year old traditional model of throwing students over the wall between high school, college and career. Our model provides a learning experience that integrates the three institutions—high school, college and career—into a single seamless community.

Designing Learning to Build Professional Skills

Preparing Students for the Future of Work



CAPS' approach to education prepares students to succeed in a rapidly changing and unpredictable world that demands far different skills than those demanded in the 20th century. Through profession-based learning (Pro-BL) and other experiential learning situations, instructors guide students in exploring their passions and showcasing their talents. Students collaborate across CAPS strands to solve real-world problems and expand

their skillsets—such as creativity, innovation, creative problem-solving, critical thinking, leadership, empathy, and communication—all the while building technical skills. They learn to approach challenges in a variety of new and different ways thereby developing the agility, adaptability, and resilience needed to navigate their future. They learn the value in becoming lifelong learners and how not only to survive, but to thrive.

CAPS transforms education into innovative classrooms that empower students **to drive their learning.**

Read on to explore insights, lessons learned and how-to advice from CAPS instructors, industry thought leaders, and community partners on preparing students for the future of work and for resources and tools you can use as you teach and prepare students for lifelong learning.

The Future of Work

Over the next two decades we could find ourselves learning, working, and living in ways hard to fathom today. Work in the future will be further automated and technology-enabled with a newfound value on human skills. It is the integration of human and other essential skills that will provide the best preparation for the future of work.

Mind-Blowing Stats

65%

NEW JOB TYPES

Sixty-five percent of children entering primary school today will ultimately end up working in completely new job types that do not yet exist.ⁱ



SKILLS GAPS

More than 120 million people will need up-skilling or re-skilling.ⁱⁱ



TECHNOLOGICAL ADVANCES

Thirty-two percent of today's jobs are at risk of radical transformation from automation and other advances.ⁱⁱⁱ



SOCIAL & EMOTIONAL SKILLS

Through 2030, demand for SEL skills will grow across all industries by 26%.^{iv}



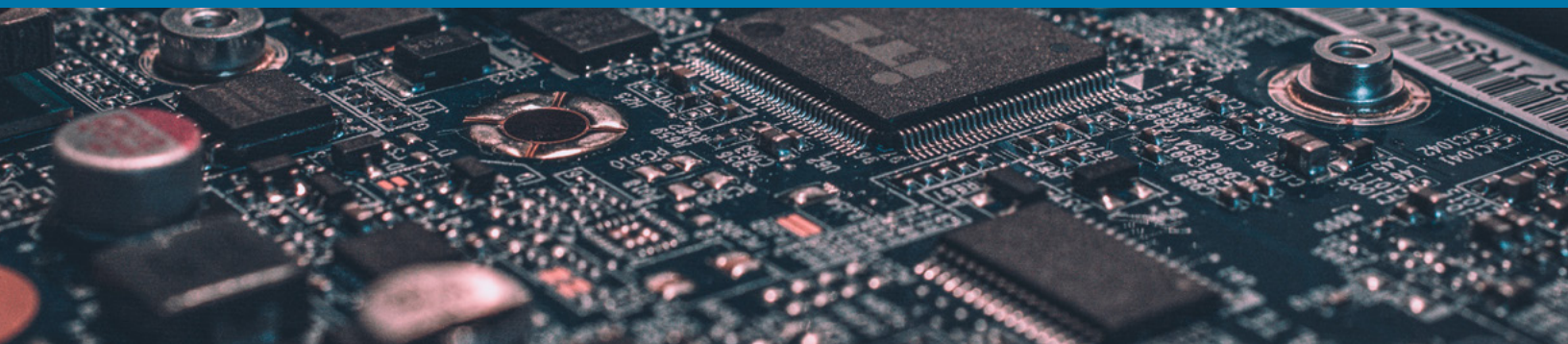
LIFELONG LEARNING

Retraining and lifelong learning will be a priority to keep the U.S. workforce competitive in the global marketplace and in responding to technological changes.^v



PROJECT-BASED WORK

79% of executives agreed that the future of work will be based more on specific projects than roles.^{vi}





Work is Rapidly Changing

If there is one thing business leaders and thinkers can agree on, it is that the kind of work we do, how we do it, and the skills required of us are changing and at an accelerating pace. The changing nature of work is reflected in a host of converging trends. Technological innovation, globalization, urbanization, digitalization, and other megatrends are evolving at an accelerating pace bringing radical shifts to not only how we work, but how we live and relate to one another.

Consider The Fourth Industrial Revolution—think the Internet of Things (IoT), robotics, artificial intelligence (AI), genome editing, self-driving vehicles, renewable energy, and social media. This phase of the industrial revolution is merging the physical, digital, and biological worlds at a scale, scope, and complexity unlike anything humankind has seen in the past making some jobs obsolete while creating a host of new jobs that did not exist before. Globally, today's most in-demand occupations or specialties did not exist ten or even five years ago.

A report by the World Economic Forum and Boston Consulting concludes that by the year 2026, nearly one million jobs will change or be eliminated in the United States alone. However, although these

changes may raise concerns, McKinsey Global Institute^{vii} predicts that globally there will be a surge of over 200 million **new** careers by the year 2030.

What This Means for the Future of Work

Many of these major drivers of transformation are having a significant impact—ranging from job creation to job displacement and from heightened labor productivity to widening skills gaps. Remote working, flexible hours, and reliance on technology have become increasingly common practices in many workplaces over the last few years. Given the need for speed and adaptability, employers increasingly rely on a revolving cast of freelancers, independent contractors, and temporary workers.

According to DeLoitte Consulting, many organizations are shifting to more team-based structures, workplaces are increasingly flexible and geographically agnostic, the overall workforce is becoming more diverse, multigenerational, and dispersed, and most careers are morphing from following predictable road maps to constant reinvention. In the face of this, various leaders across industries are reevaluating their talent profiles, including how they measure the skill sets required for success in the future."^{viii}

COVID-19

As of the date of this writing, the COVID-19 global pandemic has inflicted a major shock and has accelerated and will likely change the course of many megatrends. According to MIT Technology Review Insights^x, “In less than two months, COVID-19 created arguably the world’s largest collective shift in social activity and working practices.” Working from home and social distancing policies have radically changed the way we work and interact. The pandemic has not only changed *where* people work, but has fundamentally altered *what* work is performed and *how* we perform it.^x

The effects on the education industry have resulted in closing in-person classrooms affecting billions of students and millions of instructors. As a result, the education sector changed dramatically overnight forcing instructors to quickly pivot re-designing their courses and rapidly innovating to facilitate quality remote learning. Many of these changes are expected to continue as the industry establishes a new normal.



Among the World Economic Forum’s 2020 Future of Jobs Report, is the key finding that Skills gaps continue to be high as in-demand skills across jobs change in the next five years. The top skills and skill groups which employers see as rising in prominence in the lead up to 2025 include groups such as critical thinking and analysis as well as problem-solving, and skills in self-management such as active learning, resilience, stress tolerance, and flexibility.

World Economic Forum, *The Future of Jobs Report 2020*

The Demand for Broader Skillsets

Jobs will continue to be differentiated into disciplines separated by unique processes, terminology, and decision structures, and students will continue to

need the technical skills taught through CAPS’ academic strands. Also, as the design of jobs changes, the need will arise for skills that transfer from one discipline to another. Students entering the workforce will need to be equipped with the skills they need to not only succeed at existing jobs but to also help create new ones.

Research shows that a clear mismatch exists between the sought-after skills of employers and the skillsets of both current workers and those entering the workforce. According to Rand Corporation's Melanie A. Zaber, et. al., employers are struggling to find workers with 21st century skills. "There is a greater demand among employers for workers who master information synthesis, creativity, problem-solving, communication, and teamwork and substantial demand for skilled positions that do not require postsecondary degrees or specific credentials. Yet time after time, employers report that they cannot find the workers with these skills, and positions go unfilled."^{xi}

As the automation of repetitive, rule-based tasks evolves, there is an impetus for employees to

bring their soft skills to work. Students entering the workforce are called upon to use skills unique to humans—social and emotional skills and advanced cognitive capabilities. As demands of jobs fluctuate, employers are calling on employees with the capacity and creativity to adapt and contribute.

In *Getting Smart's* article, "Preparing All Students for an Uncertain Future of Work", Katherine Prince explains that students will need to be good at finding resources to solve problems, time and project management, and reflective leadership and feel a sense of responsibility to the broader community. They will need a mindset of lifelong learning, cultural awareness, change expertise, adaptable and effective communication, and the mindset to learn from failure.^{xii}



Anything mentally routine or predictable, no matter how cognitively intense, can and will be achieved by some form of technology. As a result, we need to think differently about what work humans best address and how we prepare them for that work.

Heather E. McGowan
GettingSmart: What if the Future of Work Starts with High School

Students will need to learn how to approach problems from many different perspectives and engage in creative and critical thinking. They will need to develop not only knowledge and skills, but also attitudes and values to guide them towards ethical and responsible actions.^{xiii} Students entering the workforce will need to be empowered and feel

they can aspire to help shape a world where well-being and sustainability—for themselves, others, and the planet—is achievable.^{xiv}

Preparing students for the future of work means educating them to thrive in a world of uncertainty and change.



...computers will continue to grow more sophisticated cognitive capacities such as critical thinking, systems thinking, and even cultural agility. But they will lack the very human lens from which we view life, learning to interpret contexts to assess, act, and make sound decisions. Human beings possess this lens because we learn from experience.

Joseph E. Aoun
Robot-Proof: Higher Education in the Age of Artificial Intelligence

Innovating Education

The education system in the U.S. was created to respond to the first industrial revolution built to transition folks from the farms to the factories. To prepare society for the future of work, we need to rethink education.

Gregg Brown, CAPS Network Coordinator

Education in the 20th century arguably served the majority of students well by providing core knowledge and skills to transition them from farms to factories. However, preparing today's students to go from education to employment (e2e) requires a new vision of education. Navigation is needed to balance the creative tension resulting from the needs of innovation on one hand and the need to rebuild education on the other. Ecosystems must be developed that not only promote *creative destruction* within existing industries, but also transform the process by which students are educated in the classroom.

Learning in *traditional* classrooms is dictated by the teacher—students complete their teacher-planned work before moving on to new concepts.^{xv} This system of education is fundamentally structured for standardization. It poses challenges in preparing today's students to succeed after high school and is less effective for students facing social and economic challenges.^{xvi} The traditional model of “memorize and test” is not preparing students with the essential skills needed to be relevant and compete and in today's workforce.



Cultivating our youngest citizens to take on the important work of the future requires a shift in the way we teach them today.

Dr. Lindsay Portnoy,
Designed to Learn: Using Design Thinking to Bring Purpose and Passion to the Classroom



Helpful Tip

- ✓ Listen to the [podcast](#) by Gregg Brown, Getting Unstuck #139: “Exploring the World of Work” posted on Quetico Career Coaching and Consulting’s website to learn more about the future of work.



Insight



We aren't teaching to the test; we are teaching the process of adapting to solve real problems.

Kelley Tuel
Veterinary Medicine Instructor,
Blue Valley Caps



Initiating Innovation

Participants at each stage of the (e2e) value chain have moved from awareness to action. Employers are not just vocalizing their needs for a skilled workforce, they are partnering with local economic development organizations and educational institutions to more directly develop needed talent. The entrepreneurial community is creating disruption to improve the outcomes of education by developing new tools and products to deliver enhanced educational experiences. Other intermediaries, including philanthropies, are marshalling resources and developing change models not achievable by schools alone.

Educational institutions have responded by creating their own disruptions. Schools are adjusting what they teach and how they teach it. Innovation—planned or forced—is occurring at all levels of educational institutions: national, state, region, district, school, and classroom. Blue Valley Center for Advanced Professional Studies (CAPS) and the CAPS Network represent a growing movement of self-disruption.

Bridging the Gaps

Schools must approach education with a flexible growth mindset in order to prepare students for today's world. Education needs to encompass a variety of methods—from e-learning and hybrid learning to infusing more technology into classrooms and offering experiential opportunities and learning situations in which students can apply learned concepts in new contexts. The focus needs to shift from a teacher-centered to a student-centered approach, in which the student's voice becomes central to the learning experience. Each student's interests, passions, skills, and needs will shape his or her learning experience.^{xvii}



Insight



We have to help students hone the problem-solving mindset that will enable them to make the leap easily to jobs that do not yet exist.

Jonah Schenker
Hudson Valley Pathways Academy

CAPS Network affiliates use Profession-based Learning (Pro-BL) and other experiential learning opportunities to bridge the gap between education and employment. CAPS is career focused. Instead of focusing on content alone, delivered in traditional one-directional lectures, this emerging approach requires a dedicated team focused on design-based learning immersive experiences that embed students in the professions they seek to explore.

The design of these experiences requires instructors to collaborate with business and community partners to create situations where students are active participants in their learning, rather than passive observers. This differs significantly from the formal training most current instructors receive through schools of education. To prepare students for success in the new economy, new instructors must be educated and trained differently and current

instructors must retool mid-career. **Both must happen at scale.**

This new way of thinking about education will equip students with the mindset to become lifelong learners—taking ownership of their learning and seeing mistakes as learning opportunities. Students will learn to adapt and build resilience. According to the futurist Richard Watson, they will develop the right skills and knowledge to compete in a world in which value will be derived largely from human interaction and the ability to invent and interpret things that machines cannot. This paradigm shift recognizes that designing a learning experience to meet each student where they are provides a greater chance for each student—including those facing the greatest social and economic challenges—to reach their maximum potential.



CAPS is the future of education. It's about teaching students to tackle real-world situations, applying entrepreneurial mindsets, and finding solutions when the answers are not multiple-choice or fill-in-the-blank. Those are the skills that create leaders of modern organizations, drive innovation to improve products and services, and grow economic prosperity for all of us.

Victor W. Hwang
Right to Start, Founder and CEO



Helpful Tip



Visit this video at <https://bvcaps.yourcapsnetwork.org/> to learn more about CAPS' model of success.

Steps, Insights and Tools

For Preparing Students for the Future of Work and Lifelong Learning

CAPS' education model is an innovative approach to education with pedagogy, content, and tools focused on preparing students with the skills necessary for life after high-school. Following are steps, insights, and tools intended to offer guidance in designing learning situations and experiences that require students to execute the various skills, competencies, and character qualities deemed necessary for success regardless of their career path or the types of jobs they may hold in the future.



Through self-selected, experiential learning situations, students tap into their unique interests, passions, and experiences. CAPS offers a way of learning that provides opportunities for students to explore potential careers and to build resume-worthy experiences through real-world situations. Students

are encouraged to design solutions to complex problems and learn the value of empathy. They learn how to connect with others and thrive in an environment of ambiguity—better preparing them for lifelong learning and for contributing to an uncertain but exciting future.

1 Prepare for the Student and Instructor Journey

Create the Right Environment for Student-Centered, Lifelong Learning

Step 1 serves as a guide in setting the stage and outlining the framework for an environment that supports CAPS model of education—from culture to relationships to re-imagining pedagogy.

Review CAPS Model of Education

CAPS Core Values, listed at the beginning of this module, provide the framework for CAPS' approach to preparing students for college and career and are worth revisiting. They are shared on affiliates' websites, brochures, and flyers, and are communicated verbally whenever the opportunity arises. Not only does this effort serve as an internal reminder of the culture and commitment of CAPS

programs, but it communicates a clear and consistent message to your local community and others. Most importantly, these Core Values are embedded in CAPS instruction, curriculum, school practices, school procedures, and more.

The steps, insights, and tools throughout this module expand on these values—professional skills development, self-discovery and exploration, an entrepreneurial mindset, and responsiveness. These values communicate CAPS' commitment to reimagining and innovating teaching and learning.



The teacher's role in building a positive culture is akin to developing the sorts of attitudes, beliefs, and practices that would characterize a really good neighborhood. Indicators of this kind of classroom "neighborhood" include mutual respect, a sense of safety, an expectation of growth, and a sense that everyone feels welcomed and contributes to everyone else feeling welcomed.

Carol Ann Thomlinson
Author and Educator

Build a Culture for Optimal Learning

Culture encompasses shared values, practices, routines, beliefs, perceptions, written and unwritten

rules, and relationships. According to Suzie Boss and John Lamer, *Project Based Teaching*, "A strong culture encourages effort, supports collaboration, amplifies motivation, and focuses attention on what matters for learning. It conveys a shared belief that we are part of something special and great."^{xviii}

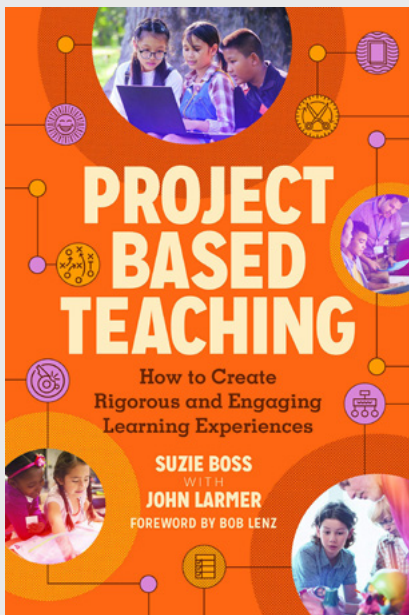
At CAPS, the culture is reinforced by norms, expectations, and traditions including everything from dress code to how student work is showcased to how CAPS is promoted in the community. Instructors shape the culture in both obvious and not-so-obvious ways from configuring the room to fostering collaboration to using humor to strengthen engagement. Building the right culture designed for optimal learning is an ongoing effort by both instructors and students.

learning and know the significant role they play in shaping the culture. Many students are initially unsure of an experiential classroom and hesitate to engage in this more open and student-empowered environment.

The CAPS learning environment is a sharp contrast to traditional classrooms. CAPS instructors, students, administrators, and community partners work together to foster a positive culture of empowerment where everyone is engaged and has a voice that is equally valued. At CAPS, instructors do not “manage” classrooms. Instead, the class culture is student-focused. This means the focus is on students’ desires, needs, skills, and interests. Every consideration is given to a culture that will optimize and maximize students’ work. Projects are student-driven and reflective of the student’s interests and passion. This requires giving the students a chance to be heard by asking for their input, feedback, and reflection on their learning.

 **Helpful Tip**

- ✔ In their book, *Project Based Teaching*, authors Suzie Boss and John Larmer present strategies for building a Pro-BL culture.



 **Helpful Tip**

- ✔ Visit CAPS Module, *Diving Into Profession-Based Learning*, Step 1, for a how-to guide for cultivating the culture and preparing your team.



Include Student Input in Building the Culture

Outside of the CAPS environment, students are accustomed to traditional top-down learning environments and likely are unfamiliar with an environment in which they have more voice in their

Establish and Communicate Shared Norms

Norms and rules differ. Norms help to internalize behavior while rules tend to dictate behavior. Shared norms reflect how people are treated and what they value as a community. They establish the *how* of engagement and collaboration. Shared norms may include setting up the classroom, active listening, taking risks, respectful communication, openness, or trying new things. CAPS students play an active role alongside instructors in establishing and upholding classroom norms. In doing so, students take ownership of the classroom culture and make sure the norms are followed. They feel respected and show respect to others. Including students in establishing norms means they are empowered as active participants in the learning environment.



Helpful Tip

- ✓ Begin by explaining the meaning of shared norms and why they are important. Share with students that most work at CAPS is done in teams on projects. Either in smaller groups or one large group, ask students to share specific examples within their group of how something has interfered with their learning (For example, “*I end up doing all the work.*”) and then to discuss and list a norm that might solve that problem. After listing students’ proposed norms, facilitate a discussion. “Which ones encourage active participation, build trust and respect, and encourage inquiry? Is there anything we want to add?” Finally, ask students to vote on which norms to adopt. Display the results online and/or in the classroom where they are visible and can be revisited throughout the year.



Embrace Culturally Responsive Teaching

CAPS' student body reflects students of varying races, cultures, and socioeconomic statuses. Generally speaking, students, their experiences, upbringings, and backgrounds have changed compared to students over the past few decades. As a result, the way instructors educate these students must also change, suggests Cherese Childers-McKee, an assistant teaching professor at Northeastern University's College of Professional Studies. She states, "One of these shifting approaches to education is known as culturally responsive teaching."^{xix}

Culturally responsive teaching (CRT)—an approach that makes meaningful connections between what students learn in school and their cultures, languages, and life experiences—creates an environment, curricula, and instructional methods that validate and reflect the experiences, diversity, and identities of all students.^{xx}

In *Shaping the Teacher Identity*, Kwame Sarfo-Mensah describes the specific attributes a teacher possesses in order to be a culturally responsive teacher and effective in the classroom.

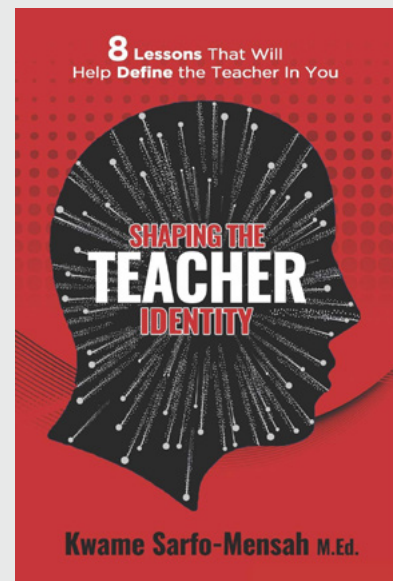
- Evaluate your behavior
- Get to know your students
- Adapt your instructional strategies
- Be inclusive of all cultures



Helpful Tip

- ✓ *Shaping the Teacher Identity* by Kwame Sarfo-Mensah, M.Ed., offers insights into designing for equity. *Shaping the Teacher Identity* guides the reader through a self-exploration of their life and helps them extract the inherent qualities that uniquely define who they are as educators.

Through this exploration, one will discover that the teacher's identity is directly and indirectly shaped by their unique life experiences and the valuable lessons they have learned from those experiences.



Culturally responsive instructors recognize each student's value, uniqueness, and differences. They recognize that students bring differences in cultural backgrounds, language, and an array of experiences and skills. Instructors who are culturally responsive work to ensure their instructional decisions respect and reflect the experiences and values of **all** those they teach.



Insight



Students anywhere are a function of chances and choices. No matter their background, the CAPS Model embraces their heritage and experiences and works to expand their awareness of options and nurture their exploration as they seek their passion and strengths.

Gregg Brown,
CAPS Network Coordinator

In a blog post for Northeastern University, “5 Culturally Responsive Teaching Strategies”, Kristin Burnham lists five culturally responsive teaching strategies for educators:

1 “Activate students’ prior knowledge.”

Students are not blank slates; they enter the classroom with diverse experiences. Instructors should encourage students to draw on their prior knowledge in order to contribute to group discussions, which provides an anchor to learning.

2 Make learning contextual.

Tie lessons from the curriculum to the students’ social communities to make lessons more contextual and relevant. If you’re reading a chapter in history class, for example, discuss why it matters today, in your school, or your community. Take the concept you’re learning about and create a project that enables them to draw parallels.

3 Encourage students to leverage their cultural capital.

Because not all students come from the same background, it’s important to encourage those who don’t to have a voice. Say, for example, you teach an English class that contains ESL students. It’s important to find ways to activate the experiences they do have—their cultural capital.

The teacher may choose a book for the class to read in which the ESL students could relate and feel like they could be the expert, for instance. As a teacher, Childers-McKee once chose a book that told the story of a child of migrant workers because some of her students came from an agricultural background.

“When you have a mixed classroom, you want those in the minority to feel like they are an expert. You want to draw from their experiences,” she says. “I do caution that you don’t want to cross a line and make ‘Johnny’ feel like he needs to speak for all Mexican people by putting them on the spot, for example. That’s a line you need to walk.”

4 Reconsider your classroom setup.

Take inventory of the books in your classroom library: Do they include authors of diverse races? Is the LGBTQ community represented? Do the books include urban families or only suburban families? Beyond your classroom library, consider

the posters you display on your walls and your bulletin boards, too. “These are all small changes you can make to your classroom more culturally responsive,” Childers-McKee says.

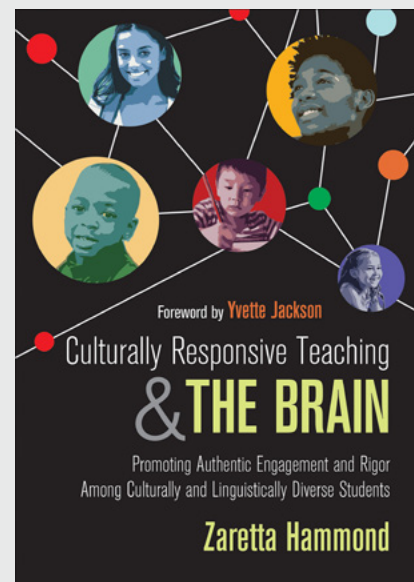
5 Build relationships.

Not all students want to learn from all instructors because the instructors may not make them feel like they are valued, Childers-McKee says. Instructors need to work to build relationships with their students to ensure they feel respected, valued, and seen for who they are. Building those relationships helps them build community within the classroom and with each other, which is extremely important.”^{xxi}



Helpful Tip

- ✓ In this book, Zaretta Hammond draws on cutting edge neuroscience research to offer an innovative approach for designing and implementing brain compatible culturally responsive instruction.



Work Towards Equity and Equality

Equality of education and the experiences in the classroom are certainly not the only solutions to inequality and equity, but they are important contributors and are within the part of the world in which we have influence. CAPS instructors strive to give each student, regardless of social, economic, or another status, the same resources (equality) and access to the resources they need to learn and to be successful (equity). They work to help students develop marketable skills, bring awareness of possibilities, and to extend opportunities to each student.

Getting to know each student, encouraging students by convincing them of their own brilliance, administering student self-assessments, and embracing and celebrating each student as unique in their own way are just some of the ways instructors can build equity and equality. Careful consideration should be given to building these elements into daily routines and classroom culture.

- Reflect on the culture to ensure each student feels empowered to share their thoughts and ideas making sure the quieter students feel comfortable enough to speak up.
- Identify the diversity of your students through community-building exercises and consider how those differences will play out in group discussion and the teamwork involved in Pro-BL and other experiential learning situations.

Embrace an Entrepreneurial Mindset

As an entrepreneurial organization, CAPS students are encouraged and rewarded for thinking creatively, innovatively, and challenging the status quo. An entrepreneurial approach is valued, encouraged, and rewarded. An entrepreneurial mindset is measured in these ways: CAPS affiliates are open-minded and continually look at ways in which to introduce fresh, new ideas. They seek to experiment in ways that bring new value. Both instructors and students have a positive mental attitude toward learning, have a creative mindset looking for novel ideas and new approaches, can be persuasive, are motivated and driven, are tenacious, and have the ability and openness to learning from failure.



Insight



To address sensitive issues of equality, I invite speakers into my class who represent underrepresented groups, such as women and minorities. Those have been my highest rated speakers.

**Drew McAllister,
Program Director, Spark!**

Here are ways in which to promote equity in the classroom:

- Listen for moments of bias or other identity-based assumptions and ideas that students bring up in the classroom. When these situations arise, stop and address the issue at the moment. Call attention to the comment and discuss why that comment may have been insensitive. Students learn through the discomfort.



Insights

Here are examples of how CAPS affiliates across the country are modeling and continuing to reinforce the beliefs, values, habits, and routines that contribute to CAPS culture.



I've leaned heavily on choosing words that aren't like class. "All Hands Meeting" is how I refer to our "class." We learned an introduction to Agile workflow in the first quarter, and I keep coming back to those principles, talking to students about making defined goals for the week and marking progress on the way to those goals. Students log progress daily using different tools (Google Sheets, Trello for application development, and Miro for my graphic design group).

Our "company" (strand) values are: Grow Always, Make a Difference, and Build Trust. I try to accomplish those by publicly celebrating when a team or individual acts in a way that lines up with our values.

Drew McAllister,
Program Director, Spark!



Each Monday and Friday I hold a Scrum with students asking them to stand and report on successes, challenges, and next steps for their project. In this way, students stay engaged in their learning and are excited to share their progress. It builds confidence. As a teacher, I had participated in a professional development event organized by our school leadership and hosted by Perceptive Software introducing a framework called Agile Project Management. One step of the Scrum process is to hold periodic meetings where every person on the team gets two minutes to address successes, problems, and next steps with their projects.

Gregg Brown,
CAPS Network Coordinator



CAPS allows for more one-on-one time than a traditional classroom setting, and facilitators can learn about their students' interests. This allows for individualized experiences so when you walk into a CAPS classroom every single student can be working on something different. We also allow students to create their own schedules, knowing they have deadlines to meet and deliverables to present to fellow students, the class facilitator, and business partners.

Karen Kunkel,
GO CAPS Coordinator, Springfield
Area Chamber of Commerce



We have a first name basis; professional atmosphere. Students are treated in many ways like employees of a corporation with many departments. Students have choices. They work on what they want to learn about more so than in a traditional classroom. We learn through exploration instead of checklists and competencies.

Collaboration is encouraged among all students. All are open and available for open communication. They have a willingness to speak openly and honestly.

Brian Gregoire
Director, Andover CAPS



Cultivate Strong Trusting Relationships

Trusting relationships between students and instructors and with community partners is arguably one of the most important things instructors and students can do to be effective. The stronger the relationships, the more inclined people will be to participate openly and actively.

Build Relationships with and Between Students

Getting to know students means recognizing their individual needs and differences. Each student comes from a different background, has experienced life differently, and has their own set of unique interests, motivations, and areas that need

strengthening. Even their learning styles differ; some are more verbal learners while others learn best listening and absorbing. Taking the time to discover and reflect on these differences provides insights on which project a student might excel and in which role a student will be best suited for on the project team.

Ask Questions to Gain Understanding

Below are examples of questions CAPS instructors have used to ask students to look inward and share something about their lives both in and out of the classroom. The same questions can also be used to help students better understand each other. Learning about experiences—home life, educational experiences, out-of-school activities, and other life experiences—all contribute to understanding each student and for students to understand each other.

Research shows that students learn best when they feel safe. A strong culture encourages effort, supports collaboration, amplifies motivation, and focuses attention on what matters for learning. It conveys a shared belief that we are part of something special and great.

Suzie Boss and John Larmer
Project Based Learning

Questions to ask students may include:

- What is something unique or interesting about someone you live with?
- What languages are spoken in your home? By whom?
- What do you like to do after school? Do you participate in sports, organizations, volunteer? Why did you choose these activities?
- What are you passionate about? Why?
- What are some of your stronger skills? How did you learn these skills?
- What are some of your fears?
- What is your favorite subject and why? What makes the subject enjoyable?
- What are some examples of how instructors taught that made a class enjoyable? In contrast, what are some examples of how instructors taught that made a class less enjoyable?
- What is your least favorite subject and why?
- What do you believe is your best method of learning? (Ex: taking notes; reading chapters, etc.)
- What things should I do to help you do well this year?



 **Helpful Tip**

✔ Encourage students to share their responses in a variety of ways using face-to-face discussion groups, [Sketchnotes](#), online apps, video, flipcharts, and other tools. Online applications and tools such as Podcasts, [Google Cardboard](#), [Flipgrid](#) (video discussion experience), and Zoom capture student work and enable discussion. Students can share their experiences about themselves openly or choose to share anonymously.

- What questions or concerns do you have?
- What has been your biggest challenge and how did you overcome it?
- How do you manage your time to get the most accomplished?
- If you could go anywhere tomorrow, where would it be and what would you hope to learn?
- What do you see yourself doing five years from now?
- What problem would you like to solve in your lifetime and why?

Build Relationships with Community Partners

Community partnerships and professional relationships are key to CAPS. It is behind the lifeblood of what we do. Through these partnerships, students experience a real and authentic connection to future opportunities while at the same time adding value to these partners by putting young and innovative ideas into action. Community partners help shape curriculum, provide real-world projects, bring expertise, support professional development for instructors, invest in equipment and supplies, and provide job shadow opportunities, speakers, mentors, and internships.

Getting to know community partners is as important as getting to know your students. Meeting face-to-face is not the only way to develop partnerships and stay engaged. Get to know community partners through LinkedIn, video “drop-ins” on YouTube, and

in virtual or hybrid weekly meetings. LinkedIn allows for uploading video bios. YouTube can be used as a resource to upload how-to videos and showcase students' work. Students may experience an increase in community partners who want to become mentors because it requires less time than in-person meetings.

Ask Questions to Gain Understanding

Questions to ask community partners may include:

- What are you hoping to gain from this relationship with CAPS?
- What are your expectations of our students?
- What, if any, concerns do you have?
- What are you most excited about?

Rethink the Role of Instructor and Student

CAPS approaches the role of instructor and student much differently than traditional models. A CAPS instructor plays the role of a facilitator or coach and is the “guide on the side” rather than the “sage on the stage.” Instructors do not “manage” classrooms, instead, they build a culture of communication with students to facilitate learning—guiding them and giving them the autonomy to ask probing questions that promote deeper learning.

Content is important, but the skills to be learned are more critical. Once students learn the skills, they must be practiced. And for students to practice, the instructor cannot be in the lead. Students must assume the responsibility for how to arrive at solutions. The result is students knowing and understanding not only what they are learning, but “why” it is important to learn.

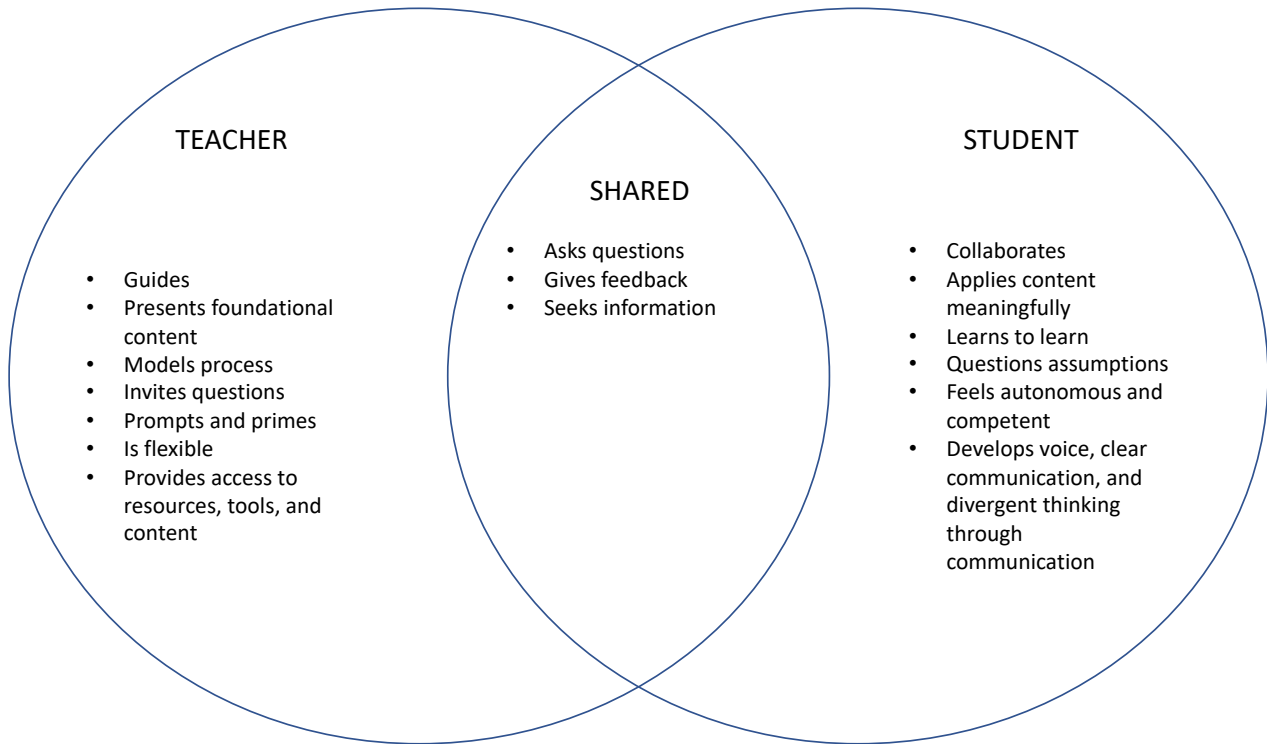
CAPS instructors create a collaborative environment in which students lead projects and other forms of experiences while they provide direction when necessary. This breaks from the more traditional teaching model in which instructors hand out assignments and lead the learner. CAPS instructors set goals with students and encourage and allow students to explore the topic, select their project, work directly with the community partner who takes the role of a client, manage their time, and create their project goals.



Helpful Tip

- ✓ Refer to CAPS module, *Building & Growing Community Partnerships*, for more information on building relationships with community partners.





Source: Lindsay Portnoy, *Designed to Learn*, p.26^{xxii}

Align Teaching Roles with Student Readiness

CAPS instructors take on four key roles in supporting students through experiential learning. Based on David Kolb's Educator Role Profile, instructors serve as 1) facilitator, 2) coach, 3) subject expert, and

4) standard-setter and evaluator. Their role is fluid based on the designed experience, stage of the project, student learning style, and the student's academic maturity level. Pro-BL and other experiential learning opportunities are immersive and two-way. They eliminate instructors as lecturers and, instead, use instructors as guides blending structure and student empowerment into each experience.

Insight

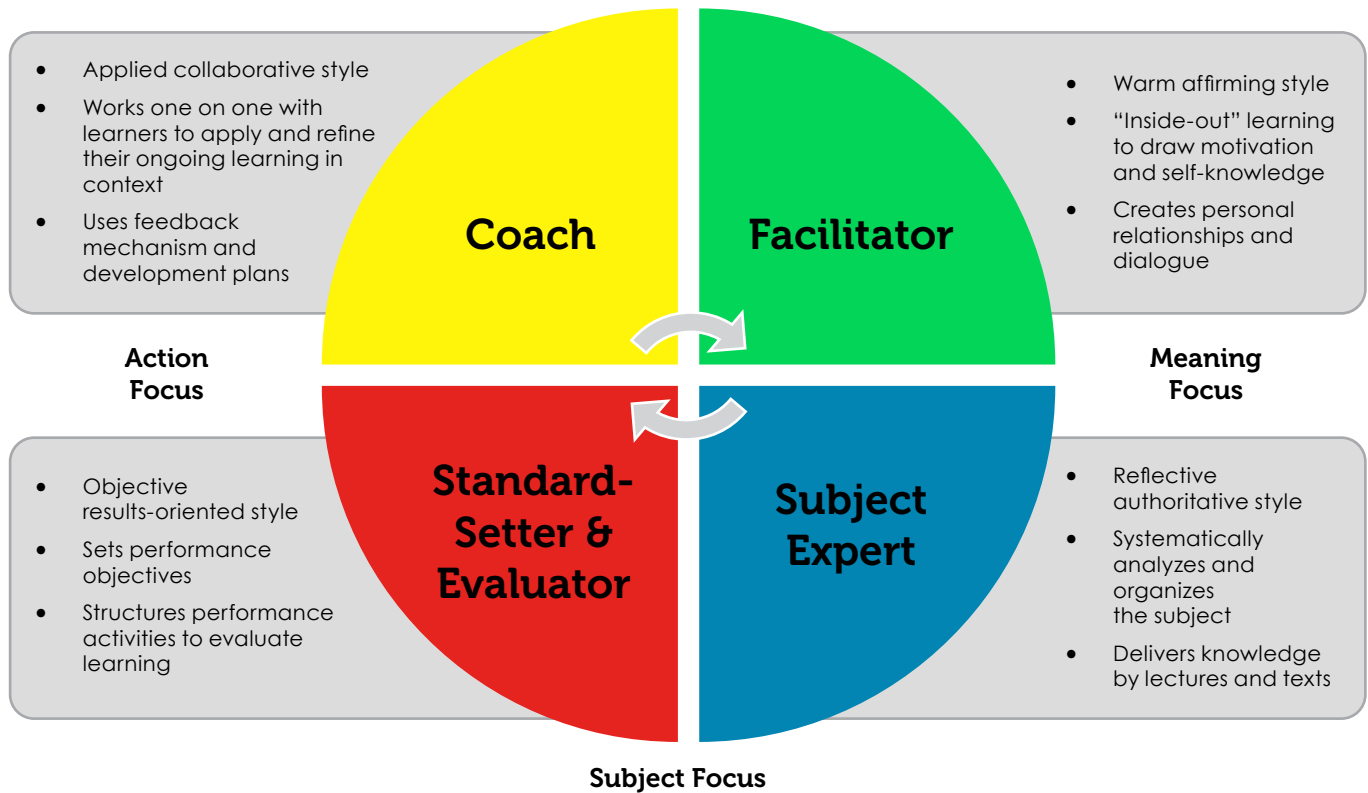


Like "Speed Dating," "Mentor Madness" can be designed to expose students to a wide range of current practitioners and potential network connections.

Janet Graham,
Global Business Instructor,
Blue Valley CAPS



Kolb Educator Role Profile



Facilitator

As a facilitator, CAPS instructors put students at the center and involve them in decision making and problem-solving drawing from them rather than telling them what to learn. Dismissing the standardized approach of lectures, instructors create a highly collaborative class environment in which students are encouraged to actively participate in discussion and teamwork to complete their projects and tasks. As facilitators, instructors use concrete experience and reflective observation to help students get in touch with and reflect on their own experiences.

Facilitators design a learning approach around creating opportunities for students to ask questions and lead their own inquiry to find answers and solutions. Adopting a warm and affirming style draws students' interests and intrinsic motivation. Becoming a facilitator versus instructor fosters the development of strong trusting relationships with students.



Helpful Tip

As a facilitator:

- Build a trusting relationship.
- Avoid lectures or traditional teaching techniques.
- Be genuine, empathetic, and understanding.
- Teach without correcting, analyzing, or judging.
- Encourage expressions of thoughts and emotions.
- Move around the classroom.
- Create an environment for independent learning.
- Promote high collaboration and positive relationships between students.



Coach

As coaches, instructors work one-on-one with students in a collaborative, encouraging style to personalize the student's experience. Drawing from extensive content knowledge and their own experiences, instructors coach students on how to use knowledge to achieve their goals, set students on a path toward reaching a goal, and engage them in a conversation that leads them toward insightful action.

To be effective as a coach, rather than simply providing answers, ask open-ended and generative questions guiding the student towards finding the resources needed to take the next step in learning. In this way, students have ownership of their learning and are accountable for their growth. Guide students through developing a personal development plan and provide feedback on their performance. Through this approach, students learn how to view the “problem” through different lenses so they can see various paths to different solutions.



Helpful Tip

As a coach:

- Get to know the student.
- Guide the student in applying knowledge to achieve their goals.
- Guide the student in setting goals both individually and for the team.
- Help the student develop self-regulatory skills.

Subject Expert

As subject experts, instructors use their extensive content knowledge to organize subject matter around central concepts of the discipline and to arouse the interests and curiosity of students. In this role, instructors help students to organize and connect their reflections modeling and encouraging critical thinking.

Being a subject expert demands continuous learning on the part of the instructor. At CAPS, instructors are continuously aware of changes in their field. They are self-motivators in advancing their knowledge and skills. Instructors interface with local experts in applicable fields to augment their expertise bringing the most current information to students.



Standard-Setter and Evaluator

As a standard-setter and evaluator, instructors help students master the application of knowledge and skill to meet performance. Instructors provide regular feedback by closely monitoring the student's performance. In this role, instructors often adopt an objective, results-oriented style to help students evaluate their learning. This approach fosters the development of thinking, deciding, and acting.



Helpful Tip

As a subject expert:

- Be a student of the discipline—gain extensive knowledge of what you teach.
- Know both the discipline and pedagogy based on how students learn.
- Deliver knowledge through innovative methods.
- Leverage students' prior knowledge to arouse interest and curiosity.
- Teach students the art of asking questions—allow them to find their answers from each other.
- Connect the subject matter to the students' interests.



Helpful Tip

As a standard-setter and evaluator:

- Structure performance activities to evaluate learning.
- Use continuous, authentic outcomes assessment.
- Stay student-focused.

Visit <https://experientiallearninginstitute.org/programs/assessments/kolb-educator-role-profile/> to take the Kolb Educator Role Profile survey designed to assess your preferred approach to educating others.

Move Away From Traditional Pedagogy

To this day, the majority of teacher colleges focus on the traditional set of tools to build a learning environment to include curriculum standards, syllabi, lesson plans, textbooks, and rubrics. Teachers are taught to assign readings, lecture, and test students. This classic pedagogy has been in place since the First Industrial Revolution, but no longer serves students as they prepare for the jobs of the future.

CAPS approach to education is anything but traditional. Pedagogy and content are grounded in a mindset of purpose, relevance, and meaning—knowing that students who find these attributes in their studies are more engaged and motivated to pursue new knowledge and skills. All students progress from basic skills to literacies, to the skills achieved through deeper learning.

CAPS students engage in deeper learning as a result of being placed in learning situations that require them to develop and execute professional skills. Today's students need to be fully immersed in an environment in which the traditional approach of memorization, repetition, and testing gives way to experiential pedagogies. CAPS students learn through discovery, inquiry, curiosity, and passion. Through real-world experiences, they are encouraged to engage in learning and synthesize new concepts motivating them to persist through challenges, provoking them to seek deeper understanding, and inspiring them to become lifelong learners.

Bloom's New Taxonomy as a Pedagogical Tool

Reflecting on Bloom's New Taxonomy—a series of cognitive skills and learning objectives arranged in a hierarchical model—we can map our current portfolio of lessons to the hierarchy of thinking skills. In other words, as we teach, we must also create opportunities to experience an increasing degree of complexity of thinking. We build on the foundation of the unique knowledge and understanding of our vocabulary and processes and seek more challenges where the student must apply this foundation to situations that require the application, analysis, synthesis, and finally evaluation. Or, as a hierarchy more reflective of the current economy: remember, understand, apply, analyze, evaluate and create.



Helpful Tip

✓ For each of the traditional components of education, spend some time considering **how** you would move from traditional methods to innovative methods for each of these elements:

- Course
- Standards
- Curriculum
- Textbook
- Scope & Sequence
- Syllabus
- Lesson plans
- Rubrics
- Assessments

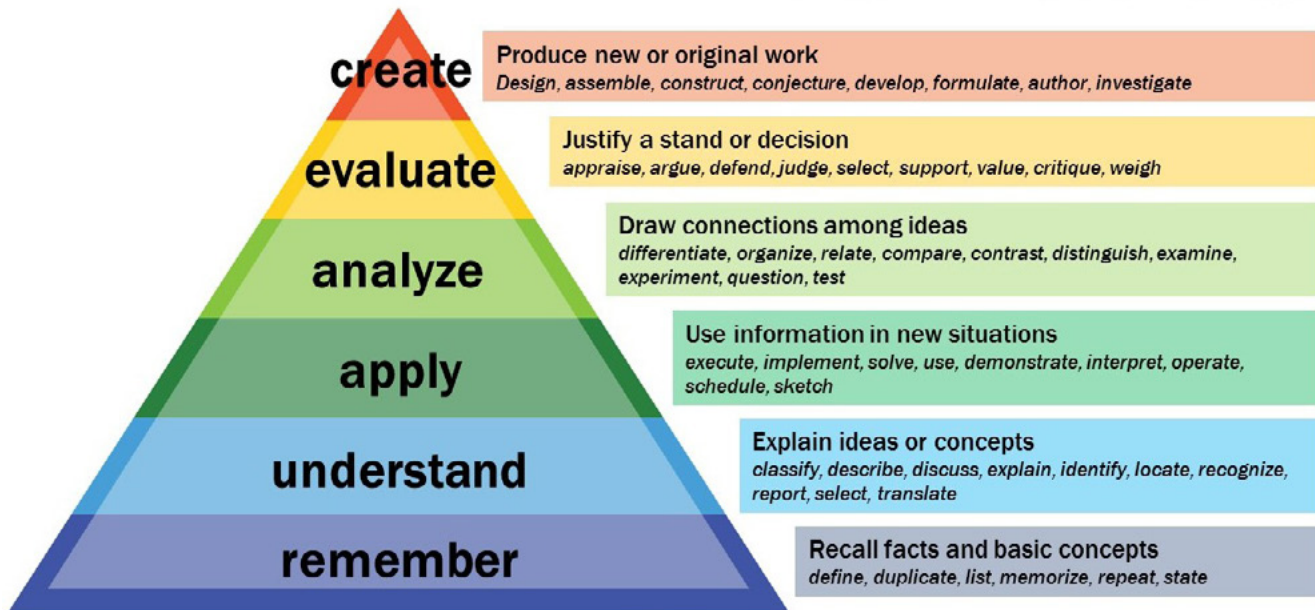


Helpful Tip

✓ Read [PBLWorks](#) blog post, "We Learn by Doing: What Educators Get Wrong about Bloom's Taxonomy" and Society for [Cultural Anthropology](#), "[Pedagogical Tools: Bloom's Taxonomy](#)" for more information on using Bloom's Taxonomy as a tool is designing pedagogy.

When starting any portfolio of lessons, consider the level of each student. According to Kevin Cummins, "A Teacher's Guide to Bloom's Taxonomy", the taxonomy provides a framework when creating objectives to move from the simple to the complex or the concrete to abstract.^{xxiii} Its framework is useful in assisting in composing questions for students that provide opportunities to assess those levels of thinking.

Bloom's Taxonomy



Source: Vanderbilt University Center for Teaching

Instructors as Learning Designers

CAPS instructors are afforded autonomy, empowered, and supported in designing learning experiences that match the strengths and passion of their students and to meet students where they are. Each CAPS affiliate's culture, student body, and instructors are unique in their own way. CAPS instructors are never afraid to try something new and are not afraid of failure. CAPS instructors are designers, innovators, and creators.

Creativity and empowerment in teaching are part of CAPS culture. Instructors are encouraged to design learning experiences using innovative pedagogies such as Pro-BL, presentations, internships, or other experiences that create opportunities for all students—one in which all students are empowered and have a chance to practice what they have learned and to prepare themselves to become lifelong learners.

Behaviors of Experiential Instructors

Experiential learning experiences are, by their nature, unpredictable and for the most part, student-guided.

Therefore, instructors must see themselves as a resource, supportive, and engaged in the learning process. It is important to be flexible and comfortable with ambiguity.

CAPS instructors:

- Create choices for students
- Create student experiences rather than individual lessons
- Design flexible and dynamic classrooms—not structured
- Build relationships with business partners to stay connected to the industry
- Can collaborate with others across disciplines
- Make instruction relevant to the real-world
- Develop project management skills
- Go beyond and/or ignore standards
- Ask forgiveness instead of asking permission
- Hold enthusiasm and expertise with the content
- Master both disruption and continuous improvement innovation
- Treat students as peers
- Share successes and failures with others



Insight



The CAPS model gives educators permission to meet students where they are by motivating them to do more and become greater than they could ever imagined.

Shameka Montgomery,
Career Education/Metropolitan
Director, Department of Career &
Adult Education, Excel CAPS

Engaging Students in Creating Student-Empowered Experiences

Student-empowered instruction revolves around the interests, needs, and abilities of the student. When instruction revolves around student interest as the focus, they become fully engaged in the process. CAPS instructors encourage students to share in the design of their learning experiences and allow them influence over their learning—to explore, experiment, and discover topics of interest to them. As we state throughout this module, in student-empowered classrooms, students are 1) encouraged to ask questions and participate in discussions with instructors monitoring and providing feedback, 2) collaborate, and 3) participate in assessing their learning.

Emphasize the “How” and “Why” of Learning

Instructors know they must teach students content standards (the “what”) but also recognize that real learning happens when students consider the “how” and “why.”

At CAPS, the *how* is addressed through Pro-BL and other experiential learning situations that provide a framework allowing students to dig deep into content in a real-world way to understand a problem and discover solutions. Through facilitated, experiential learning, unlike traditional lecturing, students learn to self-assess *how* they knew when they understood the subject matter or *how* they identified opportunities or arrived at solutions.

The “*why*” is the motivation that drives us to engage in new learning. According to cognitive scientist and author Lindsay Portnoy, “the *why* is the motivation that drives us to engage in new learning—to speak a new language, learn to drive, or learn to code long after your days as a student.” She asks, “What prompted you to engage in this new learning?”^{xiv} Ask yourself such questions as, “Why did I pursue a career in engineering? Why did I choose biosciences as my career path?” Students’ *why* drives their passion and motivates them to learn. Through CAPS array of learning situations, students see how their projects and other activities connect to their daily lives providing the “*why*” of their learning. Because projects are selected by students based on their interests and passions, students are connected to their learning in a personal way.



Insight



To help students hone their passion and purpose, we use AWS Educate as a tool. We have lots of conversations as students move through the basic units. AWS provides a foundational curriculum of discovery that students can pursue outside of class, so it gives associates something to work on in their “passion” time outside of class while I’m discussing passion at a larger level during class.

Drew McAllister,
Program Director, Spark!

Design Experiential and Meaningful Learning Experiences

This section explores experiential learning situations as a framework for establishing a mindset and approach to pedagogy that CAPS affiliates embrace. This is the crucial step in moving away from traditional education models and adopting an innovative experience.

Create an Experiential Classroom

Just because you covered it, does not mean students learned it. Students need to *do something* to learn. They need to experience their learning. In experiential classrooms, students are charged with asking questions and discovering answers to challenges faced by individuals and society. *Defined Learning* expands on this, “Through project-based learning and other experiential situations, students plan, organize work, choose resources, and manage long-term activities. To solve problems they collaborate, invent, design, investigate, evaluate, revise, and communicate their solutions with authentic audiences such as community partners or representatives from local businesses.”^{xv}



Helpful Tip

- ✔ These practices help to better engage students in collaborative learning:
 - Establish ground rules for participation and contributions
 - Incorporate team-building exercises
 - Help students get to know each other
 - Have students create a work plan for their project
 - Engage students in self- and team-assessment



When classrooms are designed to be experiential:

- Students can immediately apply knowledge to real-world experiences helping them to better retain information.
- Students develop a creative and analytical thinking mindset by engaging in projects and other experiential learning situations to find solutions to real-world, human, or community problems. Through this process, they develop skills and a mindset that can be applied to any situation throughout their lives and careers.
- Learning experiences are designed for students to work collaboratively across strands. Working in teams and drawing on the technical skills of different strands, they learn to interact productively and effectively to generate ideas and design solutions while stepping out of their comfort zone.
- Students develop communication skills and gain new knowledge by asking questions, sharing ideas, and presenting findings—both with their peers and with community partners.
- Students build must-have skills for future careers. Processes like Design Thinking guide students through defining, planning, and designing solutions to problems. They learn essential skills such as problem-solving, collaboration, and creative thinking. Through practicing empathy, they learn to put themselves in other people's shoes and connect with how others might be feeling about their problem, circumstance, or situation. These lifelong skills can be applied regardless of the situation or problem.
- Learning situations build students' confidence and make learning fun. Students become much more invested in their learning when they are instrumental in choosing projects based on their interests, tasked with managing and steering those projects, and learn that failure is a path to learning and an invitation to revise and try again.
- Students learn to reflect on their learning and experiences, which help them better retain information.

A blend of structure and student empowerment must be designed into each learning experience. Learning is directed by questions, challenges, or opportunities that students work on together to address.

Expand Student Awareness and Understanding

CAPS instructors seek and design learning situations that expose students to a world beyond their familiarity. Many of us tend to live in our own bubble building a limited view of the world. While some students have opportunities to travel the U.S. and abroad learning about other cultures and ideas, others build a view of the world based on their local perspective, experiences, and circumstances. Lack of awareness can limit both the understanding and aspirations of the student.

CAPS learning situations are designed to challenge what students know and what they think is possible. They provide opportunities for students to be introduced to people from different cultures through Zoom and other cost-effective technology making the world smaller and bringing authentic experiences to students.

Go Where Students Lead

CAPS motto of "Go Where Students Lead" means moving into a model and a structure in which they have an opportunity to identify and engage in what they are passionate about through projects and other experiences in an authentic way. In this way, they see the relevance of what they are being taught. Students have a voice and take an active role in their learning.

Foster Student Agency

As we've stated throughout this module, through the encouragement and support of great instructors, students are given a choice and the opportunity to voice their opinions on everything from what projects they pursue to how those projects are assessed. They work collaboratively in teams to plan, set goals, organize, and self-monitor. Students are provided opportunities to demonstrate agency outside the classroom by working with community partners as clients. Through these approaches, students become motivated to learn, engage their curiosity, and learn to apply new knowledge. They feel empowered and gain confidence in believing they have what it takes to shape their world.

Four Components of Student Agency

Set Advantageous Goals	Initiate Action Toward Those Goals	Reflect and Revise	Internalize Self-Efficacy
Awareness Forethought Intentionality Playful competence	Choice Voice Free will Freedom Autonomy Individual volition Regulative causality Self-influence Self-initiation Ownership	Self-reflectiveness Self-assessment Self-control Self-discipline Grit Perseverance Conscientiousness	Growth mindset Internal locus of control Empowerment Self-efficacy

Source: *Education Reimagined*^{xxvi}

Focus on the Journey

At CAPS, learning is a journey and not a destination. In conventional or traditional education, students are used to getting everything handed to them upfront, memorizing, and then assessing knowledge through testing. For example, completing a reading assignment and then being tested on what was answered correctly and where the student failed. Unfortunately, this traditional method does not allow for discovery, problem-solving, or learning to apply knowledge. Instead, it tests short-term memory rather than measuring understanding.

Through Pro-BL and other experiential and engaging situations that combine structure and student empowerment, students learn to pull what they need rather than having knowledge pushed at them. Students learn to recognize patterns and draw conclusions. They learn to stop being afraid of failure and to use it as part of the learning process.

Focus on the Process; Not the Outcome

At CAPS, experiential learning experiences are designed to focus on the process rather than the outcomes which align better with mastering a skill or growth mindset than the traditional testing of knowledge.

Based on David Kolb's^{xxvii} Circle of Learning model, students 1) have an experience (doing: concrete experience), 2) reflect on the experience (reviewing: reflective observation), 3) learn from the experience (concluding: abstract conceptualism, and 4) try out what they've learned (planning: active experimentation).



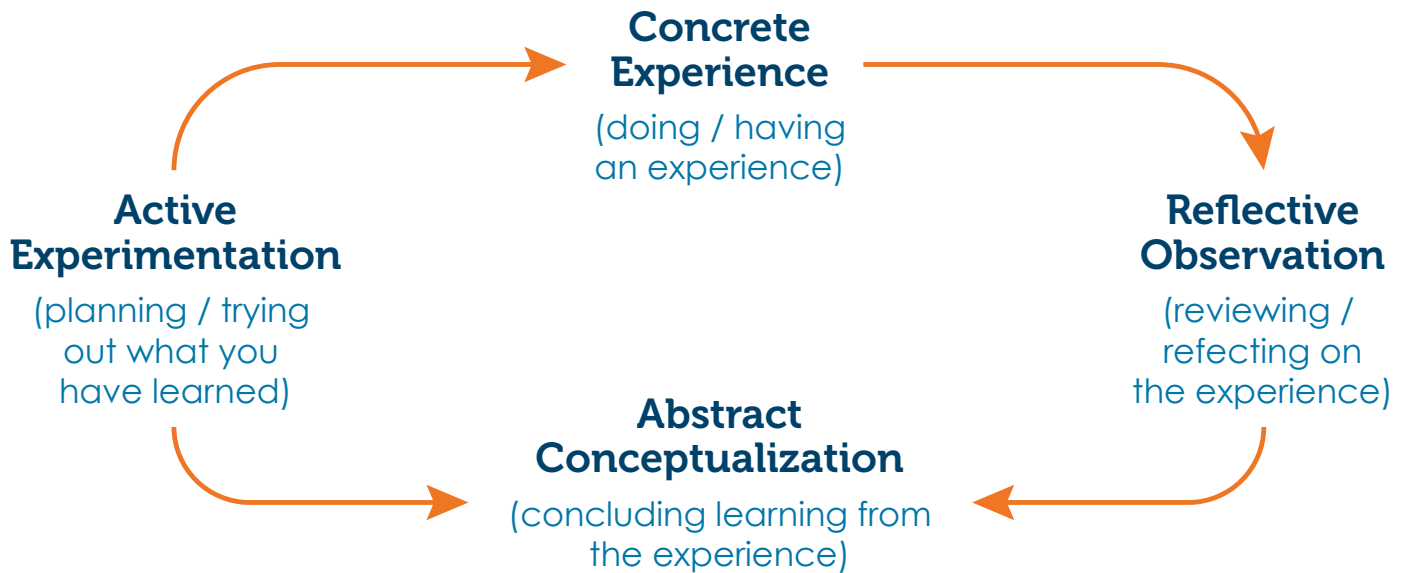
Insight



It's important to learn how to "fail forward" as it's impossible for every idea or action to be completely on target 100% of the time. When a business partner makes recommendations for your pitch idea or your facilitator makes you aware of other areas you need to work on, take the feedback as beneficial, not critical or personal, and make changes that can really improve your concept or performance. Even when a failure feels epic, you've still learned something from it.

Karen Kunkel,
**GO CAPS Coordinator, Springfield Area
 Chamber of Commerce**

Kolb's Circle of Learning



Kolb outlines a typical experiential learning cycle consisting of four stages: action, reflection, conceptualization, and application. Kolb suggests that learning is cyclical—experience, reflect, generalize, and test—and that students may enter the circle of learning at any phase. The model emphasizes the importance of students:

- **having the motivation** to learn;
- being **actively involved** in the learning;
- ability **to reflect** on the situation;
- using **analytical** skills to conceptualize the experience;
- using **decision-making** skills; and
- using their **problem-solving** skills.

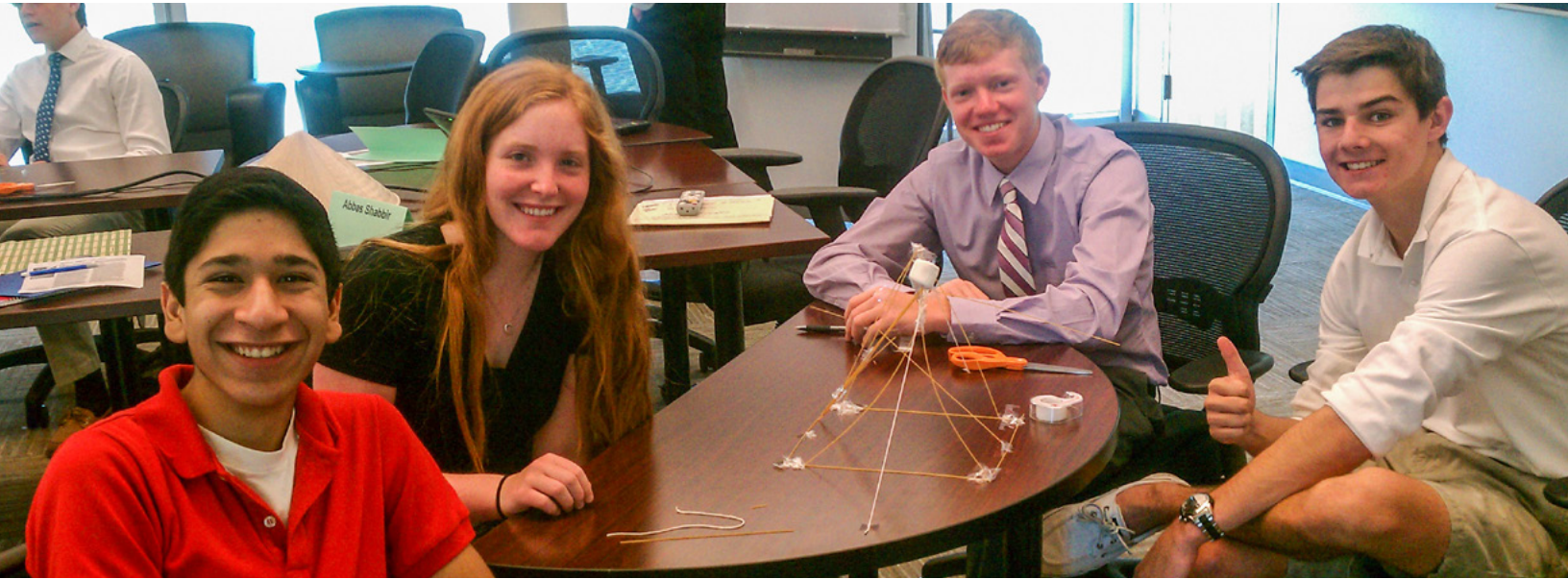
Indicators of Learning

Traditional approaches to measuring success or failure have been focused on test scores and grades, however, this may not accurately reflect the student's learning. They are not necessarily true indicators. Therefore, it is more important to keep students focused on the process and their own growth within that process rather than the results of a "moment in time" indicator.



Helpful Tip

- ✓ Encourage failure then learning through recovery.
- ✓ Make learning about the process, not the destination.
- ✓ Use multiple measures and methods
- ✓ Reflect both standards (content) and industry (performance).
- ✓ Empower students to self-assess.
- ✓ Creative tension through stress, but not distress.
- ✓ Assess both the individual and the team.
- ✓ Provide and seek feedback.
- ✓ Encourage the application of reflection to build lifelong learning and professional practice.
- ✓ Measure engagement, not just outcomes.



Assess the Journey; Not the Destination

Traditional assessment revolves around teaching content then testing students on that content—diagnostic assessment. At best, this gauges a student's ability to memorize and retain for a short time period and often leaves them clueless about applying knowledge to the real world.

In experiential learning classrooms, diagnostic assessments are replaced with opportunities for instructors to work alongside students as they self-assess their skills; what they are good at, but more importantly where their passion lies and what they want to do with their lives. CAPS instructors use multiple assessment techniques from more formal formative to summative assessments to one-on-one discussions with students to peer-to-peer opportunities.

Helpful Tip

- ✓ [Plickers](#), [Nearpod](#), and [Socrative](#) are online tools that can be used to conduct formative assessments.

Assessment of a project should be incorporated from beginning to end. Providing students with ongoing feedback can reduce potential frustration and resentment. It allows them time to improve throughout the project. It can provide feedback that can be used by 1) instructors to improve teaching, 2) students to improve learning, and 3) partners to evaluate the scope and outcomes of projects and their experience with the students. Also, becoming comfortable with this type of feedback prepares students for the real world. CAPS approach to assessment allows room for struggle and failure and then recovery.

Insight

“
We do not grade on an accumulation of points. Instead, we grade on where you finish—not where you started and not on an average of your work, but over a time period.”

Brian Gregoire,
Director, Andover CAPS

Action Checklist #1

Prepare for the Student and Teacher Journey



Reflect on and evaluate your culture

- Review CAPS Core Values. Does your CAPS program align with CAPS Core Values?
- List the elements of a strong, supportive culture outlined in this module and discuss them as a group. Where do we excel? Where could we improve? What will prevent us from achieving our goals? What will foster our efforts to further cultivate the culture needed to succeed? (Note: If you are an established CAPS program, use this opportunity to share experiences: what has worked, what could be improved, and what would take the program to the next level.)
- Create a list and communicate shared norms. Be sure to include students in this process.
- Consider the steps you have taken to make your program and classroom more culturally responsive and to provide equity of learning opportunities. Assess your own biases and get to know your students. Have you adapted how you teach to be more culturally responsive? Are you *really* listening to students? Are students *really* listening to and learning from each other? Do all students have access to the resources needed to be successful? Review the list of behaviors of experiential learning instructors outlined in this module. In what ways are your behaviors on target? In what areas could you use improvement?
- Request access to CAPS CO-LAB. When granted, explore the many insights and experiences of other CAPS affiliates.

□ Cultivate strong relationships

- Design your strategies for building relationships to help students discover their strengths and passions. Develop a list of questions to get to know students better. Conduct one-on-one interviews with students. Invite students to share with each other either in class or through video conferences or another online platform.
- Reach out to potential or existing community partners. Ask for their engagement on curriculum, strands, student projects, and how they would be most comfortable engaging with CAPS. Utilize online applications to meet with community partners. Ask questions to gain a better understanding of what skills are important to your community partners.

□ Explore and embrace the four roles of an experiential instructor

- Familiarize yourself with the four key teacher roles in supporting students through experiential learning—1) facilitator, 2) coach, 3) subject expert, and 4) standard-setter and evaluator.
- Begin to identify situations where different roles would be used.
- Reach out to other CAPS instructors to gain more insight into how they approach each of these roles and gauge student readiness.
- Visit <http://survey.learningfromexperience.com/Login/Agreement> to take the Kolb Educator Role Profile survey designed to assess your preferred approach to educating others.

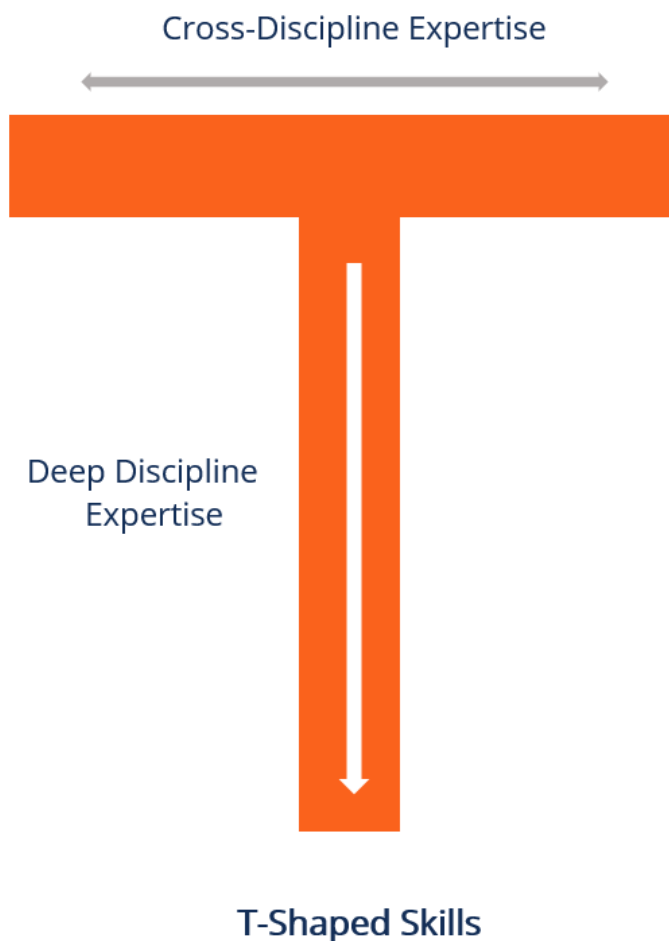
□ Examine the pedagogy and science of Profession-Based Learning (Pro-BL)

- Engage with instructors from across strands and throughout the CAPS Network to explore pedagogies and design learning experiences. Pedagogy and content should be designed around creating a student-empowered classroom, and one in which learning situations are designed to be experiential and real-world.
- Explore the elements of designing experiential and meaningful learning experiences outlined in this module. Have we designed experiences using experiential learning? Have we created ways to expose students to a world beyond their familiarity? Do we go where students lead? Does our pedagogy foster student agency, focus on the journey, and focus on the process rather than outcomes?
- Request access to CAPS CO-LAB. When granted, explore the many insights and experiences of other CAPS affiliates.
- Ensure assessments allow for student self-assessment, peer-to-peer reflection and feedback, and client feedback. Create opportunities for students to demonstrate what they have learned. Assess each step of the journey, not just the destination of the learning experiences.
- Visit CAPS' module, *Diving Into Profession-Based Learning*, to learn more about formative and summative assessments.

2 Prepare Students for the “Real World”

Equip Students with the Tools Needed to Contribute and to Succeed

Step 2 outlines *what* to teach in the form of Professional Skills to include both strand-specific technical skills and essential skills which span all strands and prepare students to be successful in today’s ever-changing world.



(Retrieved from *Corporate Finance Institute*, “T-Shaped Skills”)

Expanding Students’ Breadth of Skills

To redefine learning, CAPS students collaborate across strands making connections between ideas that may have previously seemed unrelated. This requires being familiar with and receptive to knowledge in fields other than their own. While there is still the need to teach job-specific content, the greater need is to teach skills that transfer from one discipline to another or remain relevant as the job changes.

Because technology and other global trends are advancing rapidly and disrupting jobs at an increasing pace, students need learning opportunities that train them to be adaptable and versatile. The *Center for Curriculum Redesign*, “Four Dimensional Education”, states, “The world is also no longer divided into specialists and generalists. Specialists have deep skills and narrow scope, giving them expertise that is recognized by peers but not valued outside their domain. Generalists have a broad scope but shallow skills. What counts increasingly are the *versatilists* who are able to apply depth of skill to progressively widening scope of situations and experiences, gaining new competencies, building relationships, and assuming new roles. They are capable of constantly adapting and also of constantly learning and growing, of positioning themselves and repositioning themselves in a fast-changing world.”^{xxviii}

Consider the metaphor of a “T” shaped individual or “T” shaped skills. The vertical bar on the “T” represents the depth of skills and expertise in a single field. The horizontal bar indicates the ability to collaborate across disciplines and to apply knowledge in other areas of expertise. It is composed of empathy (imagining the problem from another perspective) and enthusiasm about other people’s disciplines to the point of practicing them—for example, a liberal arts student with technical skills or a business/engineering student with humanities training.^{xxix}

Students who are “T” shaped employees excel in their main responsibilities but can perform other tasks effectively. They tend to have better communication and collaboration skills, are flexible enough to take on a new task and help other team members make sure overall goals and objectives are met, and possess soft skills such as networking and critical thinking making them a complete package.^{xxx}

Hierarchy of Skills

Professional Skill Development is the second Core Value of the CAPS model. The primary reason for this value is to distinguish between traditional academic skills associated with the classic literacies of mathematics, science, and language, and those skills that relate to the skills that apply across strands, careers, and employment. Currently, in our industry, skills associated with the e2e path are gaining attention and are identified and labeled in a myriad of ways. The labels we use are not as important as understanding their relationship to each other and eventually selecting which ones we will teach.

The term Professional Skills is used throughout this module. CAPS uses this term as a way to describe both the technical skills that are unique to each strand (discipline)—the vocabulary, processes, and tools—and the essential skills that encompass skills from dress code to complex problem solving. Technical skills differentiate professions from all other types of jobs. Essential skills are common to all strands. They are the set of skills that must be developed, in addition to the content, that not only allow practitioners to perform the work as it is done today, but allows the person the ability to perceive and adapt to the way professions, jobs, and work will be organized in the future.



Professional Skills and Competencies

Center for Advanced Professional Studies (CAPS)

At CAPS, students build the professional skills needed to succeed in a rapidly changing and unpredictable world—to not only survive, but to thrive in the future.

Students are immersed in learning situations that build these skills. Working with real-world partners, students develop the skills and an entrepreneurial and growth mindset that prepares them for their journey beyond high school.



capsnetwork
collaborate · innovate · educate

Technical Skills

Most jobs are highly specialized with each job requiring a set of specific skills and their own vocabulary and processes that make them unique to each other. CAPS, and others in the arena of career education, have created pathways that reflect this specialization by offering strands in various disciplines—Bio-science, Engineering, Human Services, Medicine & Healthcare, Business, and more.

Essential Skills

Essential skills transcend specific disciplines. They represent a set of qualities that are uniquely human and prepare students for a lifelong journey of learning.

Essential Skills

Competencies

- » Agility
- » **Analytical thinking**
- » Cognitive sensibility
- » **Collaboration**
- » **Communication**
- » **Complex problem-solving**
- » Conflict resolution
- » **Creativity**
- » **Critical thinking**
- » Discovery and inquiry
- » **Innovation**
- » Judgment and decision making
- » Negotiation
- » People management
- » Problem recognition
- » Resilience
- » Service orientation
- » **Teamwork**

Entrepreneurial Mindset

- » Adaptability
- » Apply knowledge to new situations
- » Calculated risk-taking
- » Curiosity
- » Embrace challenges
- » Failure equals learning
- » Grit / Persistence
- » Initiative
- » Leadership
- » Lifelong learning
- » Openness
- » Resilience
- » Social and cultural awareness
- » Thrive on ambiguity

Social Skills

- » Emotional intelligence
- » Empathy
- » Engagement
- » Etiquette
- » Relationship development
- » Respect

CAPS Core Values

Profession-
Based
Learning

Responsiveness

Self-Discovery
and
Exploration

Professional
Skills
Development

Entrepreneurial
Mindset

Teach Technical Skills

Creating Strands to Teach Technical Skills

Most jobs are highly specialized with each job requiring a set of specific skills and their own vocabulary and processes that make them unique to each other. CAPS and others in the arena of career education have created pathways that reflect this specialization by offering strands in various disciplines. To determine the strands to offer, CAPS affiliates are responsive to their local communities. Each CAPS affiliate offers strands based on the evolving needs of their community's workforce and by working closely with business and post-secondary partners to stay up to date on emerging trends to develop course work around those trends.

These are examples of strands offered through CAPS:

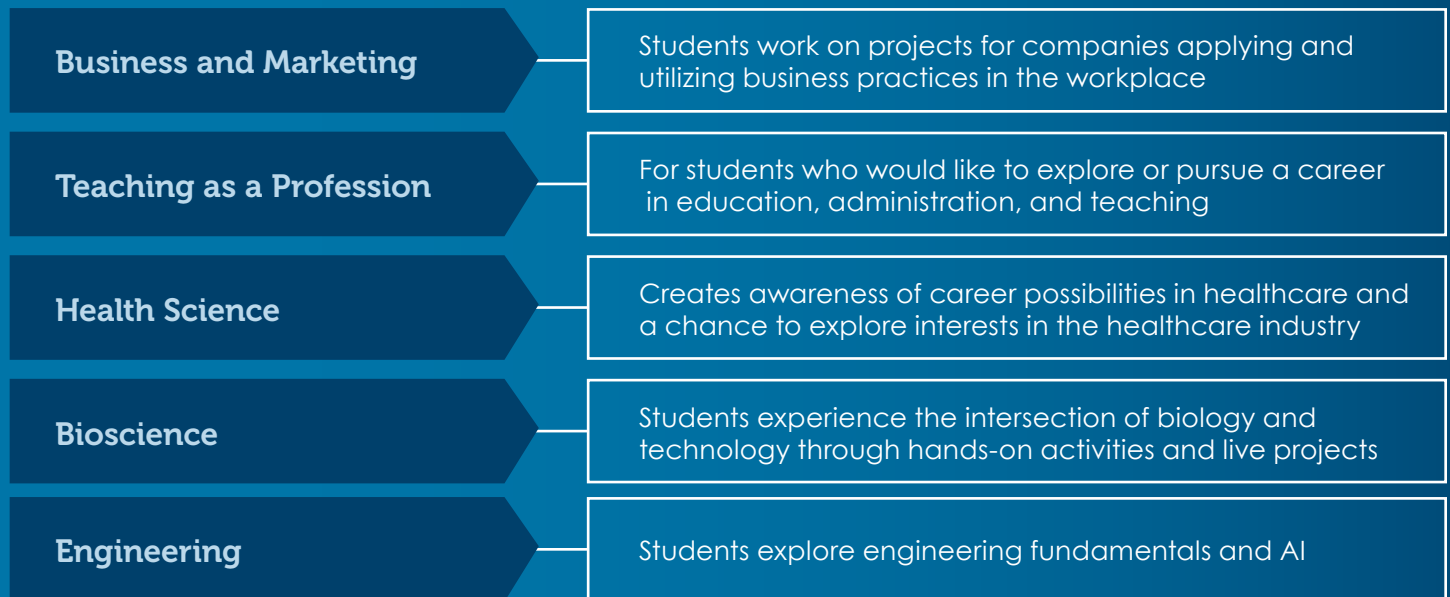


Helpful Tip



Stay current on the subject matter you teach:

- Utilize CAPS CO-LAB (reach out to CAPS Network Coordinator for access)
- Brainstorm with other CAPS instructors
- Take continuing education classes
- Utilize technology in the classroom to access the most current information
- Discuss your subject with industry experts such as CAPS partners



To determine the strands to offer in your area, reach out to your local community including businesses and economic development organizations to learn more about their needs, the skills they are looking for,

and where they see trends emerging. Then visit local high schools to gauge student interest in various job specializations.

Designing Learning Experiences Around Technical Skills

Teaching the associated technical skills and knowledge of each strand is critical to students being prepared for the workforce. CAPS instructors are seen as subject matter experts within their discipline, bringing the knowledge of technical skills students need to master the subject. Community partnerships augment this knowledge bringing real-world, current information to the “classroom” through Pro-BL, as guest speakers, and as mentors.

Remember that CAPS is about designing learning so students gain hands-on experience. CAPS instructors have access to an unlimited amount of potential experiences for technical skills. Here are some learning design choices for you to consider as you build experiences around the technical skills unique to your strand:

- Teach to the heart of the discipline using real-world examples.
- Promote “no single right answer” but that some are more optimal than others.
- Acquire new and leverage core knowledge.
- Prioritize context over content.
- Frame concepts to projects; these patterns are the connection between disciplines.
- Integrate with other disciplines. Trends indicate disciplines will be more integrated with other disciplines and increasingly augmented with technology.
- Prepare for information gaps with just-in-time instruction.
- Have students find and read foundational knowledge outside of the classroom.
- Integrate assessments throughout the project.
- Embrace and teach innovation.

Rely Less on Textbooks

Textbooks are great resources to understand a subject and may still be required for some certifications, however, they have their limitations. Pro-BL is about solving problems using the most up-to-date information available. Rather than relying solely on textbooks as a single source to access knowledge, CAPS instructors are designing

customized content relying more heavily on online resources and the knowledge and experience of community partners, guest speakers, and others. These resources ensure students have the most current information available, a variety of tools available to match the task at hand, and the opportunity to build a deeper understanding of content. These mediums are far more likely to inspire motivation and imagination and provide students with the most current information.





Integrate Technology

CAPS model of education mimics the real-world as much as possible, and integrating technology is no exception. Technology is used extensively in the real-world to conduct online research, organize and track data, communicate globally, and present ideas, and share work. For students, this means little to no time in a library. Today's students are tech savvy and find information online.

Rather than relying on memorizing information, students mimic the professional world in which information is found quickly and can be referenced over and over. Teaching content for memorization should be replaced with teaching students how and where to find credible sources of information. Students use laptops and smartphones and these powerful tools should be leveraged.

There are a multitude of technology tools and resources available for learning and that enable instructors to collect feedback informing any

adjustments to instruction. What makes the integration of technology successful is how it enhances the students' learning experience.

In addition to publications, industry journals, associations, blogs, and podcasts here are some of the resources instructors are using to create content and build learning experiences.



Insight



For technology, [I've assembled a list here](#), and add to it as my students and I find more resources.

Drew McAllister,
Program Director, Spark!



CAPS CO-LAB

Find, connect, and share information with other CAPS instructors, advisors, and leaders across the country.

[Click here](#)



CraftED

Access a range of training tools designed to help instructors become experts at project-based learning.

[Click here](#)



Kahn Academy

Offers practice exercises, instructional videos, and a personalized learning dashboard that empowers learners to study at their own pace on a number of topics.

[Click here](#)



OpenSciEd

Access and download freely available, high quality, locally adaptable, full-course, science instructional materials.

[Click here](#)



Teachers Pay Teachers

Offers more than 3 million free and paid resources, created by educators to teach numerous courses.

[Click here](#)



Helpful Tip

- ✓ The CO-LAB is a web-based application that serves as a platform to enable connection and enhance relationship building between members of CAPS Network. It is an easy-to-use tool that provides instant communication, threaded communication, and best practices by strand and entire program level.

CO-LAB offers a variety of features to connect and exchange content:

- **Profile:** Allows each member to share their story and offer their expertise to the network
- **Messaging:** Provides the ability to send a personal message quickly
- **Connect with Others:** Allows members to build community by interests rather than by strand.
- **Strand Thread:** Enables the posting and sharing of questions, comments, tools, and pictures to those teaching the same discipline.
- **Best Practices Repository:** Allows instructors to post and share documents and tools that describe and support their work.
- **Group Chats:** Provide a channel to discuss a set of important topics applicable to all strands.

To request access to CO-LAB, contact CAPS Network Coordinator

Educational Standards

Sometimes applying Pro-BL to career education can seem problematic with respect to meeting the demands of the curriculum. Standards can become a major focus of developing learning experiences and reflect one of the most ridged forms of traditional education. Many CAPS practitioners have been wrestling with this challenge for years. Their solutions and best practices can be found in the CO-LAB along with other best practices of building experiences around technical skills.

Best practices shared in CO-LAB can be supplemented with the following from Thom Markham, *Project Based Learning: Design and Coaching Guide: Expert Tools for Innovation and Inquiry for K-12 Educators*:

- **View standards as outcomes, not the experience:** In experiential learning, experiences are not designed based on standards. Standards do not become the lesson plan.
- **Identify the power standards and focus there:** Focus on standards that are most important. For example, if understanding gravity is most important to understanding science, then design learning experiences that focus on that standard and put less emphasis on the rest.
- **Decide which standards are project friendly:** Arguably, not all standards lend themselves to Pro-BL and other experiential learning situations.
- **It's OK to teach standards outside of projects:** For those standards that do not fit well in experiential learning, go ahead and teach those outside the projects and other activities.
- **Think beyond lesson plans and units:** Move beyond traditional standards of textbooks and lesson plans.
- **Let students create exercises for the content that needs to be memorized:** Create ways students can showcase their knowledge of the subject. For example, ask students to teach each other key concepts based on standards.^{xxx}

Build In Essential Skills

It is clear we do not know what lies ahead for our students' future, however, we do have the advantage of knowing what essential skills they will need once they get there.

Education today needs to be more than a system designed to simply teach content and technical skills. Charles Fadel, et. al., in *Four Dimensional Education* stresses that for students to thrive in today's world, they will need to learn how to extrapolate from what they know and apply that knowledge in novel situations. In other words, they will be rewarded for what they can do with what they know, how they behave in the world, and how they adapt. Because of this, education needs to become more about creativity, critical thinking, communication, and collaboration. It needs to become more about modern knowledge, including the capacity to recognize and exploit the potential of new technologies. It needs to be about the character qualities that help fulfilled people live and work

together and build a sustainable humanity.^{xxxii} Most important will be the ability to deal with change and to learn new things.

Today's employers are looking for people who are motivated, confident, flexible, team players, respectful, responsible, skilled negotiators, and more.

Most Sought After Skills

Much research has been done to determine the most sought-after skills employers want when considering the future of work. While lists of these skills and competencies can vary between research, articles, and current books, some skills find themselves on most lists with lists only differing in how skills are prioritized. The graphic in this module, CAPS Professional Skills & Competencies, draws attention to the skills and competencies that appear most frequently in the research and those that find themselves weaved throughout the many CAPS programs throughout the country.

Deciding What Skills to Teach

When reviewing lists of skills, it is evident that most of these are skills that are relevant and essential to any discipline. That is to say, no matter what profession is being sought, these skills and competencies are important. However, with so many, how do CAPS instructors identify and prepare for which skills to teach?

Responsiveness, one of the five core values of CAPS, provides some support. It means CAPS is responsive to the community it serves. Instructors focus learning on commonly identified skills, but are invited to supplement with skills unique and possibly more critical to local situations.

The intent is not to provide an exclusive list or to override your priorities. Instead, the intent is to leverage a set of skills and provide the framework for how you teach, its meaning, and more importantly, how you design learning experiences that require the student to live it.

Focusing on the Most Common Skills and Competencies


CAPS has created and leveraged a hierarchy of skills based on the set of skills and competencies that appear most frequently throughout the research and that are more commonly focused on throughout CAPS. These skills are separate from the technical skills of the discipline, but must be weaved into the design of every learning experience. The skills described below are those that are the most sought after by employers based on research. The format of defining the skill, documenting the *why*, and identifying the approach for application can be used to define any skill you plan to build into your learning experience.

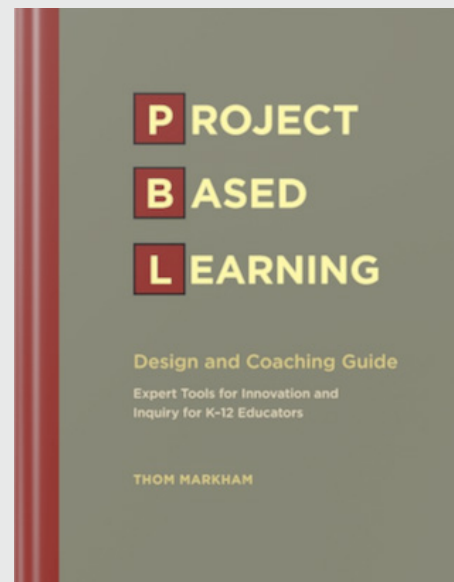
Teamwork: Most high school learning is experienced as an individual. Teamwork addresses the set of skills learned when two or more people share the same goal and success is no longer determined individually, but the result of efforts of others.

Why it's important: Most work is performed in teams. While individuals are hired to perform jobs, most disciplines require interaction with



Helpful Tip

-  In his book *Project Based Learning Design and Coaching Guide: Expert Tools for Innovation and Inquiry for K-12 Educators*, Thom Markham shares the tips, tools, and methods vital for implementing successful PBL, including the newest methods for turning groups into high performance teams and incorporating innovation and deeper inquiry into your project design.



multiple people to complete work activities including projects. Working with other people invokes a limitless number of opportunities to both address conflict, and to find synergy and produce outcomes that could not be achieved acting alone.

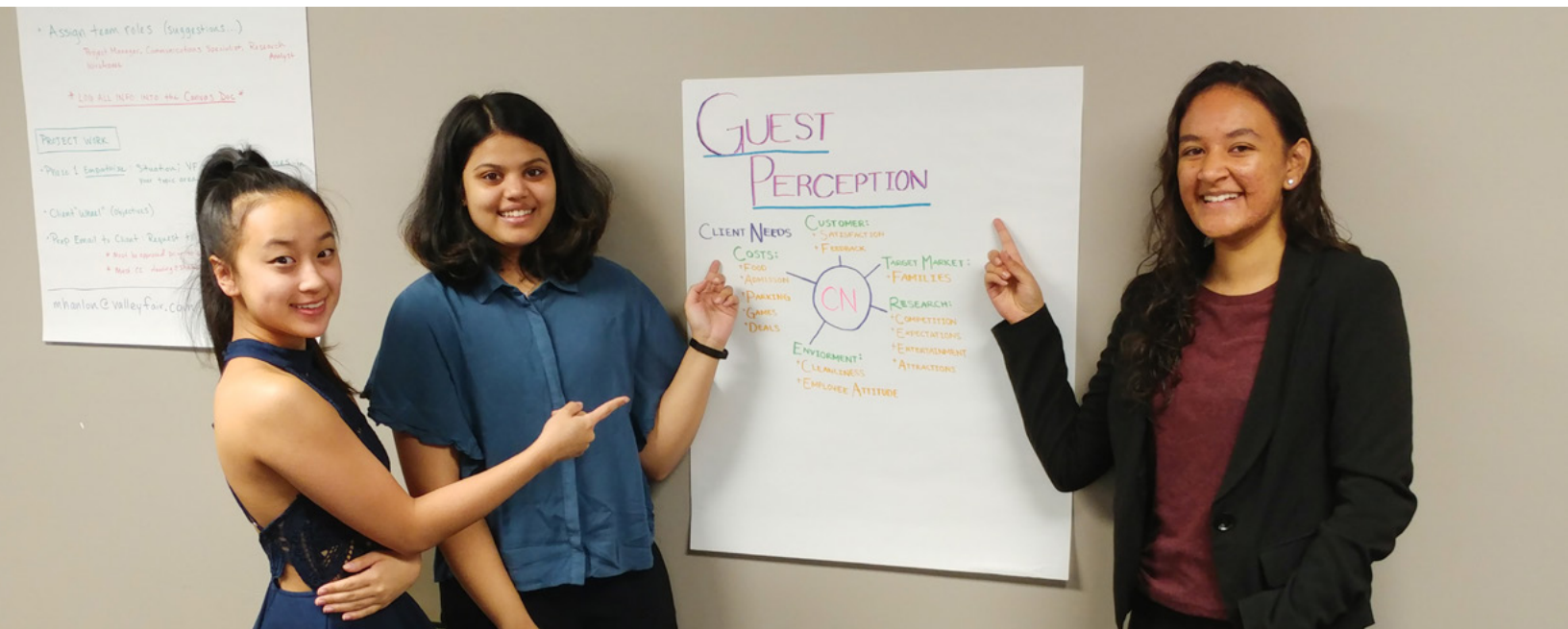
Tips for application: Organize learning experiences that require students to work in teams to achieve success. Three students are usually an optimal number. Provide structure through simple tools such as Plan-Do-Check-Act or Forming-Storming-Norming-Performing, but do not be afraid to allow some ambiguity that may lead to some creative stress, but not distress, between student team members.

Complex Problem Solving: Students learn to seek solutions to problems when the problem is not well defined and the steps are not clear. Complex problem solving involves learning from previous problems and finding new ways to solve existing problems. Students identify and grapple with tough problems learning the importance of understanding and arriving at possible solutions.

Why it's important: The future will be filled with complex problems that are hard to fathom today. The more education is focused on a students' ability to solve real-world problems creatively and effectively in real-time, the more successful the

student will become. Students need to learn to work independently with instructors as a guide versus being told what to do next. They will need to develop confidence in knowing they can make mistakes, revisit their processes and analysis, and continue working—it is just part of the process.^{xxxiii}

Tips for Application: Many CAPS affiliates use the process of Design Thinking as a framework to guide students through solving complex problems. Root Cause Analysis (RCA) is another easily taught set of problem-solving skills that can be used to prepare students for the rigor of Pro-BL experiences.



Critical Thinking: Students develop metacognition skills and learn to logically assess information to make informed decisions. They learn to think more deeply to conceptualize, apply, analyze, synthesize, and/or evaluate information gathered from observation, experience, reflection, reasoning, or communication to arrive at a solution.

Why it's important: Critical thinking enhances creativity. It encourages curiosity and reinforces problem-solving ability. It teaches students to think for themselves, to question hypotheses, to develop alternative hypotheses, and to test those hypotheses against known facts. Whether or not students can think critically can mean the

difference between success and failure. Critical thinking skills are used every day to weigh advantages and disadvantages and to make decisions. Business leaders make decisions daily from hiring and firing to what to do financially to whether or not to introduce a new product.

Tips for Application: Throughout the learning experience, students should ask "why" questions. This provides students the opportunity to leverage their value system as they work to optimize potential solutions or outcomes. Marginal Analysis, Cost/Benefit Analysis, and Root Cause Analysis techniques are a good set of tools that can be learned and utilized to examine causation and correlation.



Analytical Thinking: Students learn to analyze a problem and break it down into smaller steps. Through analytical thinking, they learn to separate facts from opinions, learn to recognize patterns and relationships, identify cause and effect, and process information in a logical format. Analytical thinking means being able to use the higher end of Bloom's Digital Taxonomy or higher-order thinking skills (HOTS).

Why it's important: Companies are outsourcing tasks that require linear thinking and routine cognitive work. Therefore, preparing students to use analytical thinking to solve problems is crucial in their ability to succeed beyond school. Analytical thinkers are adept at conceptualization, organization, classification, and knowledge synthesis. Analytical skills—seeing data and information in many different dimensions and from multiple angles—is invaluable because they allow students to deal practically with problems of a social, mathematical, and scientific nature. It empowers them to make effective and level-headed decisions.^{xxxiv}

Tips for Application: Ask students to work in teams, incorporate different viewpoints, connect different ideas, and brainstorm thoughts and ideas.

Creativity: Students learn to look at problems or situations from a fresh perspective generating new ideas. Creative thinking is a way to develop novel or unorthodox solutions that do not depend wholly on past or current solutions. Creativity is imperative for students to compete in a future where more and more rote tasks will be taken over by automation and technology.

Why it's important: Creativity allows students to see who they are, what they can do, and what they can accomplish. Today's students are in a constant state of stimulation and neural development with technology use. They are natural producers and consumers of information. Creativity in problem-solving is a skill that is developed through projects and meaningful tasks that give them challenges to overcome in imaginative ways.

If asked about what they would like to create, students will offer a myriad of different answers. "They are constantly searching for ways to express themselves and their uniqueness. Through social media, they display this creative edge and are given constant and instantaneous feedback from their peers. This same level of creative power is used as they face interesting challenges and figure out how to meet them with ingenuity and vision."^{xxxv}

Tips for Application: Lauren Cassani Davis, in “Creative Teaching and Teaching Creativity: How to Foster Creativity in the Classroom”, offers steps and strategies for fostering creativity. She states that creativity requires a safe environment in which to explore. It needs autonomy and the support of taking risks. For students to exercise their creativity, instructors need to create a compassionate, accepting environment. Students need to know they can make mistakes in front of their peers and instructors without consequence. Creativity is a process of imagining, struggling, and reimagining while working on a project. When issuing assignments, use words such as design, imagine, suppose, or invent. Use phrases like “come up with as many solutions as possible” or “be creative.” As instructors, model creativity. For example, “I explored three ways to introduce this lesson. I’m going to show you two, then you come up with the third.” Avoid competitions and comparisons, instead, focus on self-improvement providing students the opportunity to pursue their passions. Support students in providing feedback on their creativity. Most students do not realize just how creative they are.^{xxxvi}

As instructors, modeling creative thinking produces creative students. To build your creativity skills, begin by examining your attitude towards creativity. Experiment and take risks with new ways of teaching. Think about alternative solutions to problems or opportunities in front of you.

Collaboration: Students learn to effectively engage in a process to address a problem or opportunity by sharing in the understanding and effort. Through this process, they learn the benefits of collaboration and what collaboration looks like. They learn how to build teams and establish expectations and norms of working together. Students develop leadership, decision-making, trust-building, communication, and conflict management skills. Opportunities for collaboration teach students the art of active listening.

Why it's important: Most work, regardless of discipline, is performed within teams. Students' ability to work with others on a project with common goals develops a set of skills that will be utilized throughout their academic and work career.

Globalization means businesses are communicating and collaborating around the globe every day to solve problems and move

their products. Students will need to be equipped with the ability to work with people from various cultures and backgrounds efficiently and effectively.

Tips for Application: Teach students how to listen by modeling good listening skills. Teach them to ask probing questions and how to negotiate when there is disagreement or otherwise. Describe to students the benefit of establishing team agreements.

Innovation: Innovation, in the context of education, is doing something a new way. Not necessarily inventing something from nothing, but coming up with new ideas to find solutions when a new and different way could be better. It encourages instructors and students to research, explore, and use all the tools to uncover something new. It involves a different way of looking at problems and solving them.

Why it's important: Using innovative methods to teach can ignite a passion for learning and provides students with the tools they need to thrive and succeed in an innovative world. In today's world of innovation, education becomes even more important for developing the next generation of innovators. Therefore, it is not only important to model innovation but to teach it as well. It compels students to use a higher level of thinking to solve problems.

Tips for Application: Teaching innovation means awakening certain personal traits that students already possess. Some of these traits include curiosity, openness to risk-taking, dissatisfaction with the status quo, or the ability to think abstractly. Teach concepts, not facts; distinguish concepts from critical information; reward discovery and new ideas; be innovative as a teacher.

Communication: Students *learn* the art of effective communication. Communication encompasses an array of skills: thinking, writing, design, technological, emotional, and leadership. As they engage in Pro-BL and other experiential learning situations, students learn the art of listening, writing, and speaking by collaborating in various contexts and settings and different media formats. In the age of digital communication, where messages often lack tone, it has never been more important for students to learn how to convey their thoughts in ways that can be understood by others. They begin to see how communication and effective collaboration go hand-in-hand.

Why it's important: Communication is a broad term that incorporates multi-faceted levels of interaction and sharing information—both personal interactions and through digital media. Communication is the basic literacy of Pro-BL. Students can develop the most optimal solution to a problem, but if they are unable to properly communicate that solution to others, they will not be successful.

Tips for Application: Here are some examples of how instructors have helped students to hone their communication skills:

- Watching and Discussing Videos:** Communication encompasses body language, eye contact, summarizing, paraphrasing, and responding. By watching videos and engaging in conversations about the video, students can learn the art of effective communication. Ask students questions such as, “What can you tell by watching the body language of that person?”, or “What message did it send when that person ignored one of the team members in a meeting?”
- Group Presentations.** CAPS experiential learning situations typically require students to produce a written report and give an oral presentation on their project. This exercise allows students an opportunity to sharpen their oral and written communication skills and reflect on each other's work. Students have an opportunity to debate their opinions, test their listening skills, and learn to communicate as a team.
- Networking.** Connecting with people who may be able to help with career exploration or point to others who may help is a learned skill that students need to develop. Building students' networking skills requires placing them in situations that hone their skills in communication, active listening, social skills, public speaking, nonverbal communication, interpersonal skills, empathy, positivity, and focus. Networking allows students opportunities to learn the importance of empathizing with others to receive the message intended. Students practice nonverbal communication skills by maintaining eye contact, nodding their heads to show understanding, gestures, body language, and personal appearance.



Helpful Tip

- Model listening. People want to be heard. And that includes students. Ask students “What worked well? What didn't work well?”, and other such questions. Then acknowledge their responses: “Your feedback was extremely helpful. Tell me more about____.” Modeling this behavior adds to a culture that values a student's voice and helps students see themselves as partners in their learning.

Social Skills

At CAPS, students engage in experiential learning situations that allow them to cultivate transformative social skills such as understanding expectations, time management, and other essential business values. These skills are critical to providing students a competitive advantage in their post-secondary education and professional careers. They learn skills, such as how to:

- Express and monitor their own emotions and responsiveness
- Maintain composure when challenged
- Speak and write in a manner appropriate to the audience
- Provide feedback in a constructive way
- Take constructive criticism
- Listen to others
- Dress appropriately
- Come prepared for the task at hand
- Be on time and come prepared

Opportunities for students to develop these skills should be built into their learning at CAPS.



Cultivate Metacognition and Meta-Learning

Learning how to learn and to think about thinking may be the single most important skill instructors can encourage.

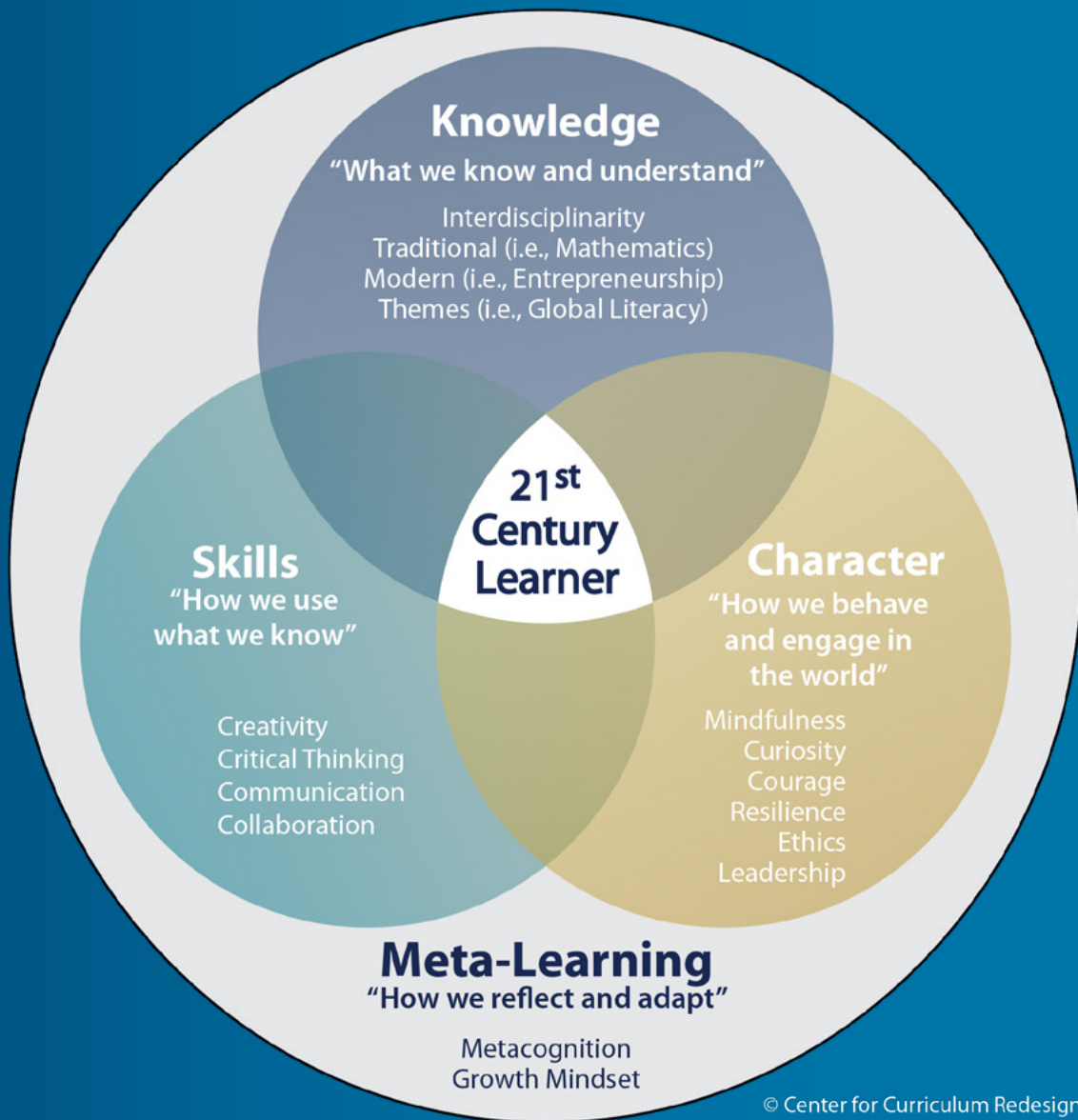
Metacognition

At CAPS, students learn to think about thinking (metacognition), which is key to lifelong learning. For students to be metacognitive, they must know and understand the *need* to think about their thinking and know *how* to build their skills. By designing projects and other experiential learning situations that are student-led with instructor guidance, students become more self-aware of how they learn best, what they know, and what they still need to learn. Students weigh choices and evaluate options for outcomes that are not obvious and in doing so learn to become critical analysts of their own thinking and learning.

According to Marilyn Price-Mitchell, "Metacognition: Nurturing Self-Awareness in the Classroom", metacognition happens when instructors cultivate students' abilities to reflect on, monitor, and evaluate their learning strategies helping them to become more self-reliant, flexible, and productive.^{xxxvii}

To boost metacognition:

- **Discuss metacognition with students.** Teach them about a growth rather than fixed mindset. Walk students through the process of a project asking them to discuss their approach and strategies.
- **Ask students to reflect on how they learned.** Sample questions include: "What was confusing to you and how did you overcome it? How did your thinking differ from your team? How did you arrive at this solution, and why did this solution make sense to you? How did you overcome any conflicts during the project? What did you find more difficult to learn and why? What worked well? What could you have done differently?"
- **Ask students to reflect on their creative thinking, critical thinking, and reasoning skills.** Consider these sample questions: "What were the different approaches your team used to solve this problem? What evidence is there to support ___? How does ___ compare with ___? Why do you think this will work? Why assume this?"



Meta Learning

Both metacognition and meta-learning are terms associated with the idea of self-awareness. While metacognition focuses on higher-order thinking to actively control the cognitive processes engaged in thinking and acquiring knowing or learning,

meta-learning is thinking about how we, ourselves, learn and can learn and develop more effectively.

The Center for Curriculum Redesign offers a complete framework across the four dimensions of an education: knowledge, skills (related to the use of knowledge), character (how one engages with, and behaves in the world), and meta-learning.



Source: Alexandria Wellness^{xxxix}

Meta-learning builds on the other three dimensions by fostering the process of self-reflection and learning how to learn. According to the *Center for Curriculum Design*, "Meta-Learning for the 21st Century: What Should Students Learn?", there "needs to be a meta layer of education, in which students practice reflection, learn about their learning, internalize a growth mindset that encourages them to strive, and learn how to adapt their learning and behavior based on their goals. The surest way to prepare students for a changing world is to give them the tools to be versatile, reflective, self-directed and self-reliant."^{xxxviii}

Leveraging Social Capital

Sociologist James Coleman defines social capital as "those intangible resources that come embedded within interpersonal relationships or social institutions." Students need a network of relationships both within and outside CAPS. The path to opportunity and success is never achieved alone. Students need to build a network of strong relationships to access resources to help them pursue their interests and passions, identify opportunities, further their potential, and reach their goals. Students need to build social capital for support, advice, or opportunities.





Helpful Tip

✔ In May 2020, during the global pandemic, P4P partnered with the CAPS Network and its affiliates to bring a 4-day online event to students of ages everywhere. Virtual Career featured 20+ speakers and drew over 1,600 registered viewers of all ages. (Click the image to read more.)



In the Spring of 2020, Ethan Wiechmann alongside the Leadership and Instructor Team at Cedar Valley CAPS, Cedar Falls Iowa created a virtual Career Week and invited professionals from different industries

around the world to share their journeys and inspire students. With intent, the professionals represented diverse races and gender. Students were exposed to various pathways presented by people “who looked like them.” (Read more at <https://www.preparingforpurpose.org/blog>)

Following that success and in response to the events of 2020, this same team took the initiative during the fall of 2020 to create impact by designing Awareness2Action Global (Visit <https://www.preparingforpurpose.org/a2aglobal-2>), an environment to directly engage students in topics not easily discussed. Internationally recognized leaders, including leaders from the Asia Society, were organized into panels where they shared their views on the political and racial issues we face as a nation. Students who had gathered from member CAPS programs across the nation broke into small teams to discuss the issues at hand and develop local action plans.

Social capital can be characterized by affiliations with community networks, organizations, and activities. Amanda Avallone, "Who You Know: Building Students' Social Capital", *Next Generating Learning Challenges* states that "social capital recognizes the key roles played by supportive others in our lives, both for bonding (emotional support, companionship, and validation) and for bridging (informational and instrumental support). In other words, social capital promotes personal well-being and provides access or bridges to resources outside the self. We are all embedded within a multi-layered ecology of connections and relationships."^{xl} Through positive interactions with these affiliations, social capital can create positive feelings of engagement and self-agency. According to some experts, social capital may improve learning outcomes and minimize the gap between soft and hard skills.

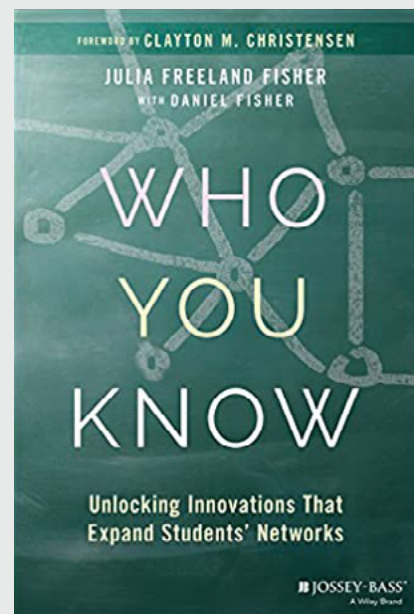


Helpful Tip

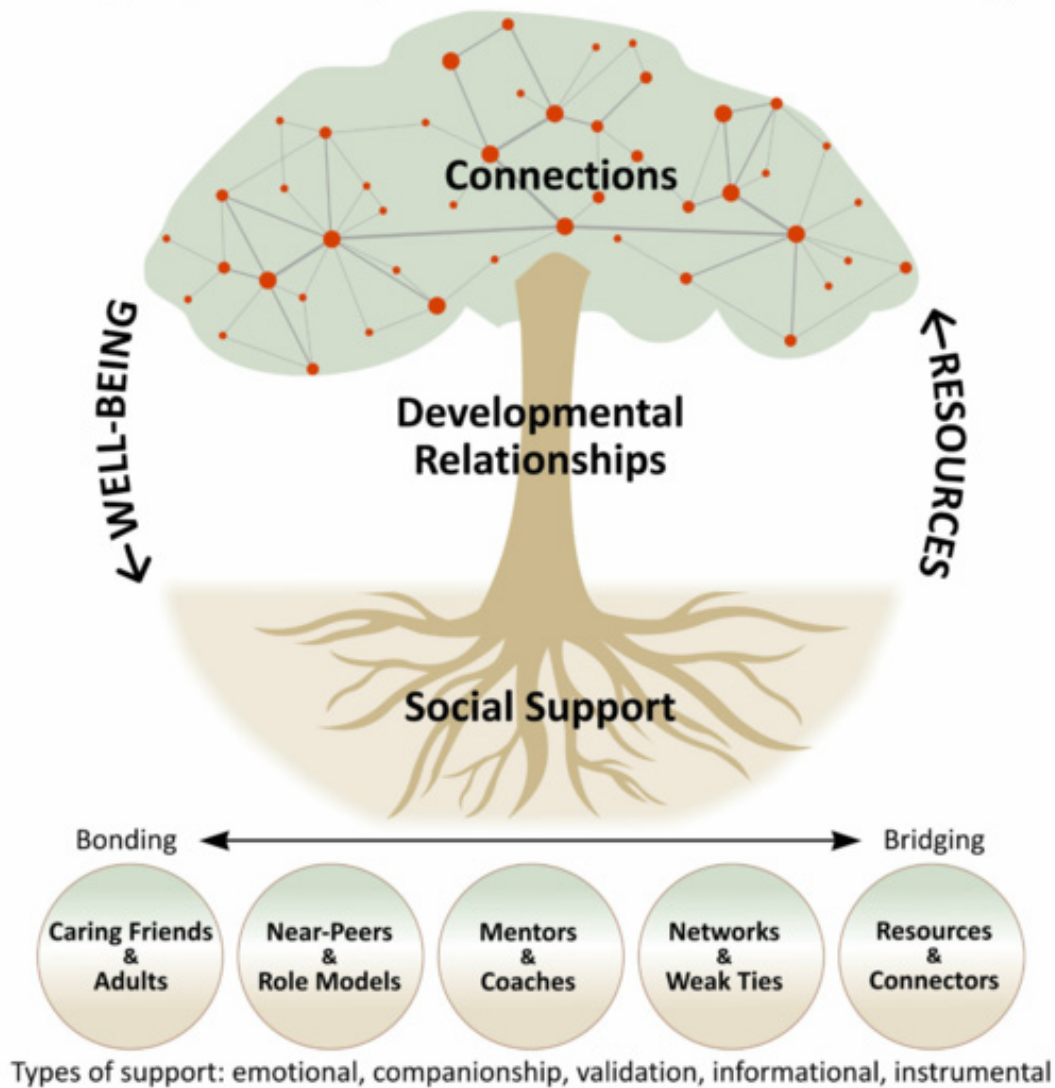
- ✓ The book, *Who You Know*, by Julia Freeland Fisher and website <https://whoyouknow.org/> explores the simple idea that relationships matter to give teachers and school administrators a fresh perspective on how to break the pattern of inequality in American classrooms. It reveals how schools can invest in the power of relationships to increase social mobility for their students.

"I remain personally most inspired by those models like Blue Valley CAPS and The CAPS Network that are focusing not just on technical skills, but on diversifying professional connections for students who might otherwise be shut out of those networks."

It is not just who you know, but who knows what you know."



The MyWays Developmental Framework for Social Capital



(Source: MyWays)^{xii}

The Social Capital Ecosystem

In “5 Essentials of Building Social Capital, Report 4” of the *MyWays Student Success Series*, Dave Lash and Grace Belfiore depict the social capital ecosystem as a tree. The roots of the tree represent the social supports that sustain well-being and growth. They serve as the foundation of trust and reciprocity on which mutually beneficial relationships can be built. The trunk of the tree corresponds to adult relationships that foster young people’s self-exploration, growth, and engagement with the larger world. The branches symbolize the complex, ever-evolving, and mutually beneficial network of connections that our students can harvest for resources to accomplish their goals.^{xiii}

Lash and Belfiore believe there to be five essential types of social capital:

- 1 **Caring Friends & Adults:** Emotional support, companionship, and validation provided by family members, peers, and close relationships with unrelated adults.
- 2 **Near-Peers & Role Models:** Ideas, inspiration, and behavior patterns explained or modeled by direct contacts, or individuals “met” only through history, entertainment, or other worlds (including fiction).
- 3 **Mentors & Coaches:** Informational support, counseling, emotional support, and validation built on a relationship of mutual knowledge and trust.



4 Networks & Weak Ties: Connections to any form of social network including one's "strong ties" (friends and close relationships) and "weak ties" (acquaintances and friends of acquaintances).

5 Resources & Connectors: Informational, instrumental (financial, material, services), and social support accessed through networks and individuals helping bridge or broker connections.

These types identify roles, not people. Parents and teachers, for example, often play many of these roles.

CAPS model of education is designed to work with students to build connections both inside and outside CAPS. Students connect with industry professionals through a rich variety of learning experiences designed to help them seek and secure social capital and to access the resources they will need to succeed in the work/learning landscape.

Closing the Opportunity Gap

Widening and strengthening students' networks moves to close the opportunity gap. CAPS seeks to connect ALL students with a network of people who can guide their careers. CAPS offers students the opportunity to build social capital by connecting students to a diverse network of peer interactions, mentorships, and industry experts. Pro-BL, site visits to community partners' businesses, guest speakers, mentors, mock interviews, and internships give students a way to interact with real-live experts from a wealth of industries. Through these connections, students are connected to people who can help them develop their strengths and career interests and expand their resources.

Helpful Tip

- ✓ Edtech that Connects, Christensen Institute provides a directory of Edtech tools connecting students to new relationships. A sidebar allows for filtering focus area, grade level, relationships, and source of relationships. Find the directory at <https://whoyouknow.org/tools/>

Helpful Tip

- ✓ Diversity is an important component of students' connections. Diverse relationships open new doors and perspectives.
- ✓ Depending on their backgrounds, socio-economic status, etc., students possess vastly different webs of networks they can tap into. Take care to find ways ALL students can access the networks and build the relationships that can help them succeed.

A four-dimensional framework for measuring students' social capital



(Source: [Christensen Institute](#))

Measuring Social Capital

The Christensen Institute proposes a four-dimensional framework for measuring students' capital: 1) quantity of relationships, 2) quality of relationships, 3) structure of networks, and 4) ability to mobilize relationships. This framework offers a way to gather information and measure efforts to equitably build students' relationships and networks as gateways to opportunities. Gathering this type of information, even informally, helps to gauge the breadth and depth of their relationships and helps to inform how these relationships might be expanded.^{xliii}

It's Not Just What You Know, But Who Knows What You Know

Having a strong network of connections is important, however, it is more than just who knows you. It is also not just *what* you know, but *who knows what you know*. Connections need to know what you can do and what you want to do. Students need to learn that letting others know what they can and want to do is not a conceited action (as long as the intent is to inform and not to brag). Throughout the student experience, let them know that sharing what they know, what they are passionate about, and how they believe they can contribute to humanity is a courageous action that will enable them to honor their potential more fully and expand their ability to make a difference.



Action Checklist #2

Equip students with the tools needed to contribute and to succeed



Expand the breadth of learning

- Examine your learning situations to ensure students are working across strands and/or have opportunities to gain knowledge in fields or strands other than their own.
- Evaluate your designed learning situations to assess whether students are actively engaging in applying knowledge from other disciplines or strands.

Consider how students learn when designing learning experiences

- Make sure students have, or know how to find, the background knowledge needed to successfully navigate the new experience.
- Focus on the context, not the content.
- Ensure students are challenged to develop their own questions for both technical and essential skills.
- Leverage the elements of Kolb's Theory of Experiential Learning model to include opportunities for concrete experiences, reflective observations, abstract conceptualization, and active experimentation.
- Optimize student motivation by meeting students where they are and providing opportunities within the experience to explore and use their strengths and passions.

□ Teach technical skills

- CAPS program disciplines and strands should be responsive to the industrial needs of the local community and reflect those careers and skills that are growing globally.
- Design learning experiences that support the “heart” of the technical skills of the selected disciplines and strands.
- Rely less on textbooks and customize your own curriculum to support the technical aspects of the discipline and strand.
- Prioritize the context of the learning over the content of the discipline.
- Request access to CAPS CO-LAB to connect with others throughout the CAPS Network to learn more about best practices.
- Participate in CAPS Network instructor video calls to learn and share best practices within your discipline and strand.

□ Design opportunities to practice essential skills into every learning situation

- Familiarize yourself with the CAPS Professional Skills & Competencies graphic.
- Work with industry and post-secondary partners to identify the skills most needed in the community, and the global market.
- Apply the format used in this module to define, explain, and begin to design into experiences by developing applications.
- Blend a set of various skills into a single learning experience.

□ Cultivate metacognition and meta-learning

- Discuss metacognition with students ensuring students understand how this skill ensures their ability to adapt to future opportunities and challenges.
- Ask students to reflect and share how they learn.
- Observe students as they experience your designed learning situations and evaluate their use of metacognition skills.

□ Leverage social capital

- Work with students to assess their current network of friends, peers, role models, and mentors. Where are the gaps? What prevents them from expanding their network? Is their network a strong network meaning they have built trusting relationships that will foster their self-exploration, growth, and engagement with the larger world? How diverse is their network? And how can you, as an instructor, work with students to build social capital?
- Provide opportunities for students to build and expand their network with connections that support their interests, strengths, and passions.
- Work with students to facilitate ways in which they can let their network of connections know what they know, what they are passionate about, and how they can contribute to humanity.

3 Put Essential Skills to Work

Moving from building lesson plans to designing learning experiences

A goal of CAPS instructors is to design experiences where students are provided opportunities to apply professional skills in real situations. Step 3 highlights teaching practices and offers criteria, tools, and examples of how learning experiences can be designed to provide students with ways in which to apply those skills.



Consider How Students Learn

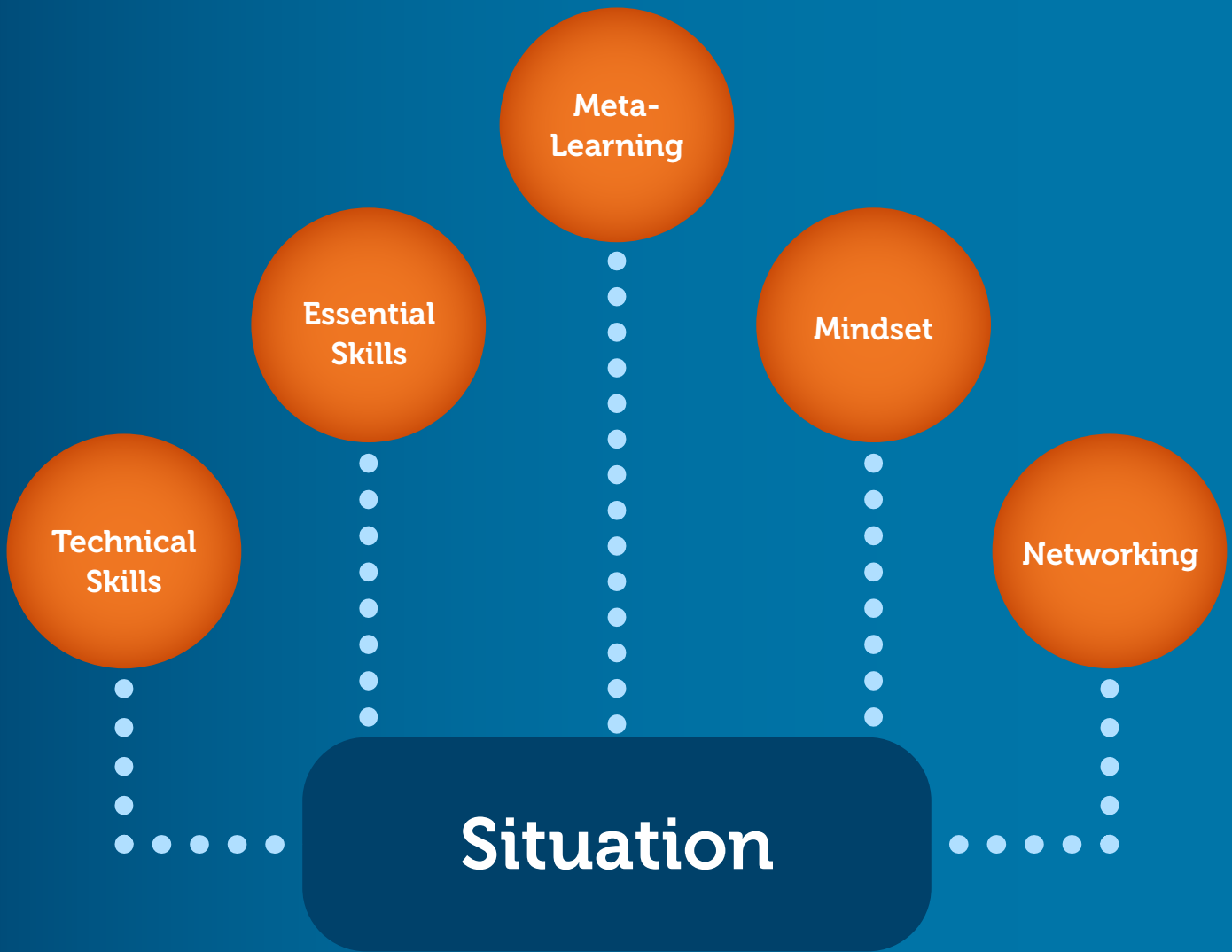
Designing effective learning experiences means understanding how learning takes place—the science of learning. Students' access to information today is unprecedented and vastly expanding. Therefore, success is not based on the traditional memorization and rote learning of content—content can be

accessed at any time—instead, success is based on the students' ability to absorb, analyze, and apply content.^{xliv}

To help students build their critical-thinking and problem-solving skills, instructors should focus on how students acquire and retain information. Following is a chart that can be used as a guide for connecting the science of learning to practical application.

Cognitive Principles		Practical Application
<p>Students learn new ideas by relating them to what they already know.</p>	<p>Empower students to leverage their past experiences as they consider new content. Transition from the teacher role of subject matter expert to one of a coach or facilitator by directing students to resources that add new knowledge to their past experiences.</p>	<ul style="list-style-type: none"> • Provide enough information to guide students, but give them the autonomy to find information on their own as the learning experience requires. • Introduce new processes ensuring students have opportunities for experimentation. • Leverage industry-based models to “oversimplify” new, complex situations. • Emphasize context as well as content. • Leverage industry partners for information to supplement a student's background experience.
<p>Students remember information better when they are given multiple but different opportunities to practice retrieving it from their long-term memories and are challenged to think about its meaning.</p>	<p>Leverage the students themselves to design innovate learning opportunities to make it easier and fun to remember content.</p>	<ul style="list-style-type: none"> • Give students choices in assignments to learn content. • Provide challenges that require students to examine the <i>why</i> and the <i>how</i>—not just the <i>what</i> of the new content. • Teach students to use analogies and stories to explain and remember content. • Space content and practice over time. • Research projects offer a great CAPS experience for learning new content.
<p>The volume of content and the pace of the delivery has a direct impact on learning.</p>	<p>Instead of building rigid “scope and sequence” documents to plan curriculum, identify sets of related content and design unique and authentic learning experiences that are weaved into a series of increasingly challenging events that build upon the learning from the previous experiences.</p>	<ul style="list-style-type: none"> • Don't “over-subscribe” the semester. Build in slack time leaving room for unexpected learning opportunities that may present themselves. • Provide options for students to both understand the breadth and depth of their knowledge and to dive deep into specific areas of their passion and interests. • Spend time with students reviewing the journey so far to provide additional perspective. • Use assessments to engage students in assessing their successes and areas for improvement.

Cognitive Principles		Practical Application
<p>For students to transfer their abilities to new situations, they need to deeply understand both the problem’s structure and context.</p>	<p>Emphasizing both content and context is important. You can think critically about a subject only to the extent that you have knowledge about that subject or know where to find new knowledge.</p>	<ul style="list-style-type: none"> • Use processes such as Design Thinking for students to first understand the structure and context of the problem before seeking information and solving. • Remind students to leverage their own experiences and resources to gain more information. • Empower students to identify what most aligns with their values when deciding solutions that should be optimized.
<p>Student motivation depends on a variety of social and psychological factors.</p>	<p>Ideally, students will be motivated to engage in course content because they are fascinated by it and enjoy it. But motivation is a complex phenomenon and depends, among other things, on whether a student identifies as the kind of person who belongs in a particular academic setting, or on whether s/he believes that his or her ability in an area can be developed with effort.</p>	<ul style="list-style-type: none"> • Help students discover that knowledge and ability can be improved through hard work. • Praise students’ effort on the process not just the outcome. • Prompt students to feel more in control of their learning by encouraging them to set learning goals (i.e., goals for improvement) rather than performance goals (i.e., goals for competence or approval). • Design experiences that let students explore their passions and strengths. • Encourage risk taking by celebrating failure. • Encourage students to see critical feedback as a sign of others’ beliefs that they are able to meet high standards.
<p>Unfamiliarity or misconceptions about learning pedagogies such as experiential learning situations and Pro-BL should not determine how experiences are designed or how instruction is provided.</p>	<p>All too often, instructors are afraid to modify their instruction because of how they were taught. While there are multiple competing pedagogies targeting a wide range of potential learning gaps, stay focused on the basic principles of classroom management redesigning it to optimize real world experiences.</p>	<ul style="list-style-type: none"> • Meet students where they are. They are each at different spots on the highway but can get further down the road no matter where they start. • Through Pro-BL and other learning situations, find opportunities for each student to draw on their strengths and passions. • Minimize textbooks with customized curriculum.

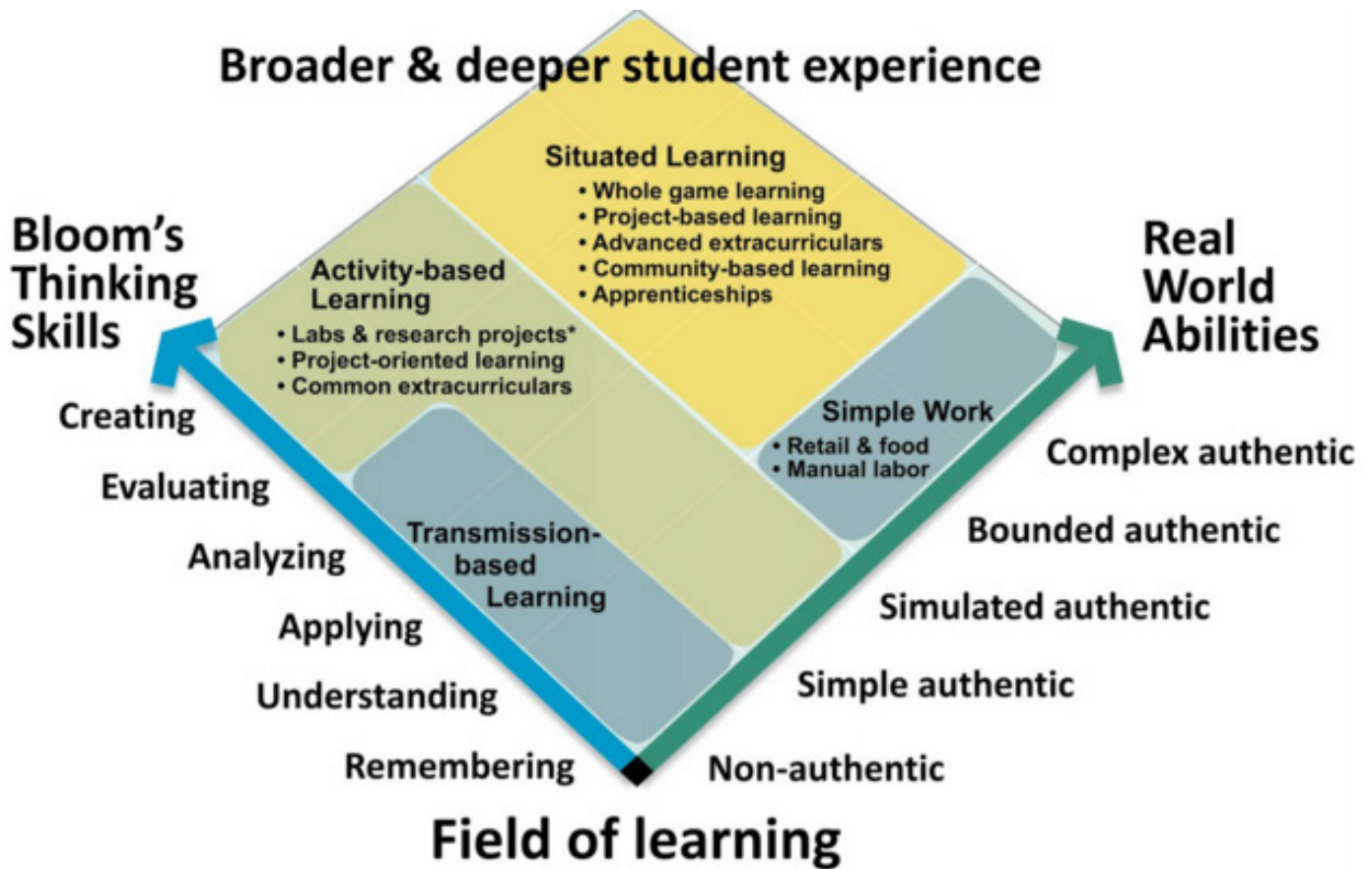


Characteristics and Elements of CAPS Experiential Learning Situations

Learning experiences can take many forms. The most frequent types of experiences across the CAPS Network are projects and internships. CAPS module, *Diving into Profession Based Learning* provides great detail on designing highly sophisticated experiences. Many of the characteristics and elements of

experiential learning situations can be leveraged in the design of smaller or more targeted learning. A mix of problem, project, and Pro-BL experiences spread throughout the semester achieves a high level of student engagement and authentic reflection of the real world.

As a designer, CAPS instructors are empowered and encouraged to create learning situations in which a set of essential skills can be experienced simultaneously with the technical aspects of the strand. These experiences seek a balance between technical content and the development of essential skills through hands-on learning.



(Source: [NextGen Learning](#))

The Field of Learning

Think of the NGLC MyWays Field of Learning as a ball field. It reflects the learning activities organized by the combination of Bloom's taxonomy of thinking skills (the left field) and the real-world abilities they require (the right field). The challenge for CAPS instructors is

to design experiences that optimizes both planes. Not all experiences will be at the top of both scales. The format that differentiates this learning from traditional learning is best represented by experiences that map to the higher sections of the field. This is where CAPS instructors want to focus their attention as they think of situations that will challenge their students.



Criteria For Designing Pro-BL Learning Experiences And Situations

Pro-BL and other experiential learning situations are defined as situations in which students are challenged to achieve a goal using both technical and essential skills required of that discipline and strand. This is a significant innovation from the classic building of lesson plans to the design of learning experiences. CAPS mission is to design and organize these situations to optimize the highest level of thinking and real world skills as illustrated in NGLC's Field of Learning.

Design learning experiences that include:

- **Learning targets over outcomes:** Select the focus of the experience in terms of the process the student will be required to navigate, versus the final outcome of the experience. It is about the journey, and not the destination.
 - **Situations:** Brainstorm a list of potential situations that reflect real, or simulate activities, that are part of the discipline of the strand.
 - **Skills:** Identify the technical and essential skills you expect to blend into the design of the experience.
 - **Student maturity:** Assess a student's maturity as defined by their willingness and ability to take on the situation. As the semester progresses, students gain experience and will reflect a higher level of maturity, therefore, they will then be ready to engage in more challenging situations.
 - **Identifying the instructor role:** Each learning situation will be unique and demand its own optimal balance between the instructor providing structure and the amount of freedom provided to the student. As students' experience matures, you can rely more heavily on the empowerment of the students. As the semester progresses, instructors often find themselves assuming the role of facilitator and coach.
- **Student choice:** The best results are achieved when there are learning options within the experience for students to gravitate to areas that align with their strengths and passions.
 - **Opportunities for failure:** The more risk of failure the richer the experience. Getting a "right answer" on the first try can facilitate learning, but not as much as the experience of failure and the need to pursue recovery in order to succeed.
 - **Assessment/Questions:** As you design the experience, identify points along the path that allow you to assess the performance throughout the entire process—not just the destination.
 - **Public CAPSTONE:** Ensure students have an opportunity to share their work in an open platform where feedback from others becomes part of the learning experience.



Insight



I model failure and call out problems that I'm struggling to solve. For example, I had a website crash on me during a plugin update. I had neglected to make a backup ahead of the update and had to escalate to our technology department to bring the site back up. I capitalized on that failure and created a slide deck that outlined my mistake, how I resolved it, and what I learned. After presenting, I relayed to my students that what I want for myself, and for them, is the learning portion of any failure. That's the gold we're mining for.

Drew McAllister,
Program Director, Spark!



The benefit of failure is an objectivity that success simply can't offer.

Maria Konnikova

Design situations that:

- **Involve resources outside the classroom:** Select a specific industry partner and provide specific expectations for integrating content and context into the experience.
- **Offer student choice:** Identify and enable learning options based on the expectations, strengths, and passions of the students involved.
- **Extend time periods:** Determine the span of time needed for the experience. Be sure to consider time periods that allow for interaction with industry partners and/or time to develop a prototype of the students' product.
- **Focus on authentic inquiry:** This is the core of the learning experience. Define the specifics of the challenge opportunity. This is only limited by instructors' creativity. Seek opportunities to iterate with industry partners.
- **Include teamwork over individual work:** Most real-world work experiences involve working in teams. However, at times, work is carried out by individuals. Determine the type of experience students will practice.
- **Allow for iterations of the product:** Build in opportunity for students to create various iterations of their product. "One-&-Done" experiences do not reflect authentic real-world experiences.
- **Promote the risk of failure:** Assessment should reward risk taking. If students feel they need to "play it safe" and seek "the single right answer" they will not develop the skills achieved through trial and error.
- **Stress but not distress:** Learning situations should be designed with a certain degree of ambiguity. They allow room for students to seek and determine the requirements of the challenge. But, do not let them flounder. Add scaffolding as necessary.
- **Build in the use of multiple skills:** Design situations that call on students to use a blend of skills.



Helpful Tip

- ✓ Learn and apply the concept of Minimum Viable Product (MVP) when designing an experience. Your design does not have to be perfect. Use continuous process improvement techniques to refine the experience from the first iteration to the next.
- ✓ Moving from the design of the experience to developing the specifics of the situation can appear redundant, but allows the instructor to construct the required artifacts that enables the execution of the experience. These artifacts can mimic the format of a lesson plan or may be a simple set of e-mails necessary to communicate the required information to begin the experience. Visit CO-LAB for Best Practice Tools to document and initiate the experience.



Helpful Tip

- ✓ Digital Promise's Map shows types of real world experiences that can be the framework for the design of learning experiences. It reflects these types on a scale of emersion and preparation time. Each type of experience has its own characteristics that can be customized to meet the need of the situation and the student.

Visit <https://realworld.digitalpromise.org/roadmap/> for more information.





Helpful Tip

- Characteristics & Elements of Profession-Based Learning and more can be found in CAPS module *Diving Into Profession-Based Learning*.

MODULE 2: DIVING INTO PROFESSION-BASED LEARNING 19

Characteristics & Elements of Profession-Based Learning

	Problem-Based	Project-Based	Profession-Based
Time Frame	Short, within one to two class periods	Longer, will require several class periods over several weeks	Longer, will require working in and out of class over several weeks
Relationship	Student & teacher	Student & teacher	Student & client
Number of Participants	Individual effort, typically not a team activity	Individual or team effort, can be organized either way	Team effort, groups of three students is optimal
Curriculum Type	"Off the shelf" not always customized	"Off the shelf" or customized, can be organized either way	Organized by the client
Skill Type	Single technical skill, lower range of Bloom's Taxonomy	Multiple technical & soft skills – middle range of Bloom's Taxonomy	Multiple technical & soft skills – high range of Bloom's Taxonomy with emphasis on critical thinking
Focus	Developed from lecture content	Can be on a simulated real-world problem	Real problems with solutions that could be implemented by the client
Method of Assignment	"Turn in" work	"Turn in" work	Differentiated, promote options for students to choose
Method of Assessment	No rubric, objective evaluation with emphasis on public presentation of recommendation to client	Rubric-based, subjective evaluation	Differentiated, subjective evaluation
Example	A lease/boy problem requiring the use of Excel	Alleviating poverty in the local community	Developing a social media strategy for a new non-profit organization



Create a Process for Experiential Learning

Design Thinking as a Framework

There are many processes for designing an experiential learning experience. For purposes of this module, we are using the process of design thinking developed by IDEO. The elements of this process are key regardless of whether you use this process or another. Design thinking is a popular framework used across the CAPS Network.

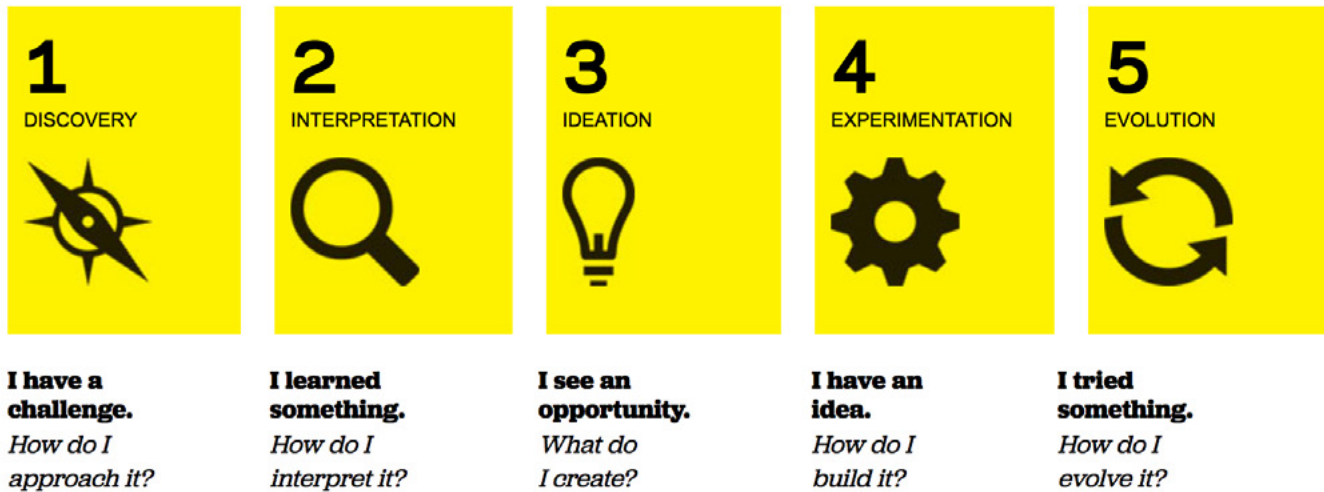
CAPS instructors use a variety of methods to teach process and strategies to design solutions. One such method is design thinking developed by IDEO.



Helpful Tip

- IDEO, pioneers of human-centered design, offers the [Design Thinking for Educators Toolkit](#) that provides insights into new ways to be intentional and collaborative when designing new solutions for your classroom, school, and community. It hones your skills and empowers you to create desirable solutions. In this toolkit, we have laid out a series of steps that can help you develop new, innovative solutions designed with people at the center.

The five phases of the design process:



(Adapted from [Design Thinking for Educators Toolkit^{xlv}](#))

It is a human-centered approach to innovation that balances feasibility, viability, and desirability with user empathy. The design process challenges students to combine empathy, ingenuity, and rationality to meet the needs of the client and to create successful solutions with an innovator's mindset. Throughout the process, students are called upon to explain their understanding. Through design thinking, students learn to identify challenges and think through their approach, gather and interpret information, generate possible solutions, refine their ideas, and test solutions. Students are taught to defer judgment early in the process, which reduces fear of failure and encourages thinking outside the box. Rather than striving for initial perfection, students learn to fail fast and learn by doing rather than avoiding failure. It requires that instructors guide rather than telling and lecturing. Design thinking demonstrates the connection between the technical skills students learn in class and real-world application getting to the "why" of learning.

The design process is outlined in linear steps, but in practice the five phases to the process can occur simultaneously and repeatedly.



Insight



I use design thinking in the design of learning experiences. I have designed this course as if it were a company, following the [Entrepreneurial Operating System](#) (EOS) Model, a framework for scaling a company from ten members up to 250. This framework combines elements of design thinking with the "backwards design" principles common within education.

Drew McAllister,
Program Director, Spark!



This stage asks students to think about who they are designing a solution for and what those people actually need. They are being asked to gain an empathetic understanding of the problem they are trying to solve. At this stage, students will “go out into the world” to research and seek inspiration by observing and asking questions. They will ponder how they are going to address the problem or opportunity asking, “How do I approach it?” Students will exercise social-emotional skills, learn to listen, and recognize the value in exploring something to gain multiple perspectives.



Students take what they have learned in the first stage and decide how to interpret that information by analyzing and synthesizing that information. They identify the core issues and define the problem as a problem-statement in a human centered manner. This stage helps students hone in on ideas to create features, functions, or any other element that will allow them to resolve the problem with fewer difficulties. Students determine what might make this project successful. As students work through this stage, they dive deeper into their technical skills growing their sense of efficacy and autonomy; learn to dive deeper into research, and learn the value of collaboration.



Now that students understand the problem, they can focus on thinking “outside the box” to identify solutions to their problem statement. Through ideation, they will see an opportunity. “What can I create?” The more ideas, the better. At this stage, it is important that students brainstorm together without judgment. Judgment limits creativity. Among many skills, students learn creativity, problem-solving, effective communication, and learn the value of an entrepreneurial mindset.



At this stage, students are developing a number of scaled down versions of the product or specific features within the product so they can investigate solutions to the problem they found in the previous stages. One-by-one, each solution is investigated and either accepted, improved, re-examined, or rejected. They will better understand how real users would behave, think, and feel when interacting with the product. In most cases, it is unrealistic to expect students to create a product that meets all the needs or wants of a market in the time period they have available to design. Entrepreneurs and product designers use an approach to design called the MVP Approach (Minimum Viable Product). MVPs allow for providing sufficient customer value by delivering minimal features that early adopters will use. Feedback from users informs building a better product. At this stage, students have an opportunity to showcase their content knowledge.



Students are thinking about how the product might evolve. They seek feedback from a diverse group of people and review the objective to determine whether or not the solution met its goals. This stage calls on students to apply critical thinking to assess their level of success.



Helpful Tip

- ✔ Lindsay Portnoy, *Designed to Learn*, asks us to consider the following questions before inviting students to use their learning to design solutions to the problems around them:

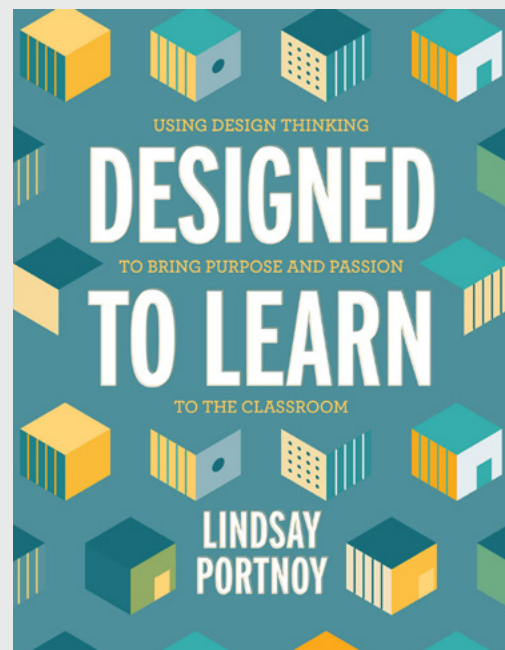
Clear goals and expectations: Do students know the goal of their learning, and are they clear about the expectations of their work? Where will students seek out additional information if they get stuck? How will students receive feedback from me and from their peers?

Contextually relevant content: Can this content be connected to the unique experiences of learners in my classroom? How can I use what I know about my learners to more deeply connect them to this learning and draw into more meaningful design experiences?

Experiences aligned to curriculum: How are my students meeting the curricular goals and learning standards while enacting design thinking? In what ways are their experiences extending the standards and goals from previous years?

Opportunities to practice: How will I support my students by providing multiple way to demonstrate mastery? What fail-safes will I put into place for when my students struggle or when they're ready for deeper learning?

Ongoing support for learning (formative assessment): Are there multiple opportunities throughout the process to provide feedback to students? What are my expectations for how students use feedback? How will I support students who wish to change their work as a result of this feedback? What tools will I provide for students to share their successes and struggles with me and others? What tools will I invite students to share that give them voice and agency in their work? (Source: Portnoy p.44)



Assessing a Pro-BL Learning Experience

At CAPS, assessment is used to evaluate whether students can recognize their strengths and passions and have gained professional experiences in pursuit of them. It is used to measure how well they worked in

teams, whether they learned a process to approach problems, and the quality of their final product including their presentation. It is conducted not only by the instructor, but engages students in assessing their own learning and development.

Students are provided with multiple opportunities throughout their experience to obtain feedback—both from instructors and from their team members.



Demonstrating Learning

Experiential learning, such as Pro – BL promoted in the CAPS Network model, requires us to redefine "what we teach," "how we teach," and "how we assess" in order to achieve an authentic experience. Pro-BL involves students performing tasks that reflect the real world of work. Evaluating performance is much more complex than using a set of multiple-choice questions. While exams are an important technique for assessing learning on the lower portion of Bloom's Taxonomy, such as content, determining the level of performance for the skills associated with the higher end of Bloom's model (which is the focus of experiential learning) requires a more varied and creative set of techniques.

Suggested Implementation

The design of the assessment is highly correlated to the design of the learning experience. The student output from a Pro- BL experience results in a set of artifacts that reflect the objectives of the project. These outputs can be assessed using rubrics built on the definition of success of the experience. But unlike most traditional learning experiences, Pro-BL promotes the concept of "failure" as a critical element of learning. For that reason, it is important to assess the process that produces these artifacts as well as the artifacts themselves.



Helpful Tip

- ✔ Visit CAPS module, *Diving Into Profession-Based Learning*, to find more information on assessments.



There is no single, widely accepted strategy to assess Pro-BL experiences. However, there is a growing body of research and resources that, like with all forms of innovation, can be combined to produce a customized tool that meets the unique needs of the unique student working on a unique project.

Be intentional in your design! Remember the End-in-Mind is an evaluation of an experience for the individual that is also worthy of appearing on a resume.



Helpful Tip

- ✔ Visit [Digital Promise® Micro-credentials](#) to access a number of CAPS micro-credentials including “Assessing a Profession-Based Learning Experience.”

Components of an Experiential Learning Assessment

- **Multiple Measures and Types are Used.** The extended time period of a Pro-BL experience lends itself to all types of assessments. Diagnostic assessments can determine the need for customized skills required of a successful project. Frequent formative assessments can provide feedback on the progress of the project and skill gaps requiring additional development. Performance and summative assessments can gauge the overall project and inform a “final” grade.
- **Structure Versus Empowerment.** Overly detailed rubrics can limit the opportunity for student decision-making and promote the incorrect idea that every real-world project has a single right answer. Strike a balance between providing a single good example and allowing the flexibility to experience success in multiple and different ways. Include student self-assessment.
- **Assess Professional Skills as Well as Technical Content.** Multiple-choice questions unique to the project’s discipline can assess the existence of technical content knowledge required of any project. In this environment, the application of professional knowledge and skills requires unscheduled observation. This may mean asking the team questions or require formal status reports from the client.
- **Measure the Process.** Formal project management processes such as project plans and weekly status reports are great sources for evaluation. Some of the best opportunities for evaluation are observing team meetings as they form, storm, norm, and perform through the stages of team dynamics.
- **Review the Interim Product.** These situations, especially if recovery is required, can provide an excellent opportunity to observe and evaluate professional skills such as critical thinking, communication, and teamwork dynamics. Providing a mid-project opportunity with the client to provide results-to-date not only reflects the mechanics of the real world, but provides an excellent formative assessment.
- **Measure the Final Product.** A final public presentation of the product by the team is an element that reflects a high level of experiential learning and is valued field-wide. Allowing the entire class to hear from all teams amplifies learning.
- **Plan for Scale.** Assessment of Pro-BL experiences can be time consuming, so it is recommended to build a routine and develop customized tools to observe and track performance. Do not sacrifice relationships for the sake of filling out a complex rubric, but become comfortable with the subjective nature of evaluation and feedback.



Formative and Summative Assessment

CAPS instructors use formative and summative assessment to assess students learning. Formative assessment offers the opportunity to check in with students throughout the experiential learning experience. In addition to assessing their knowledge of content, you are assessing the ways in which students are applying essential skills and competencies to their work and interaction with others. As an instructor, student responses inform opportunities to modify instruction and reveal areas in which students need more support. Formative assessments are to be used to provide meaningful feedback to students and to offer specific ways to improve.

Summative assessments are a way of ensuring students have acquired meaningful content throughout the experience. Lindsay Portnoy, in *Designed to Learn*, presents a series of questions that can be embedded to create more flexible summative assessments.

“Content connections:

- How was this content related to something you had learned before in our class?
- How was this content related to something you had learned in another class or in another grade?

Developing metacognitive skills:

- What part of designing solutions was the most difficult?

- When you had difficulty, how did you seek help or support?
- What additional supports would have helped you be more successful?

Working with others:

- What is one way you think you communicated well during this learning?
- What is one way you think a peer communicated well during this learning?
- What is something a peer did that impressed you most during this learning?
- When did you have a conflict during this learning?
- How did you resolve that conflict?
- How would you wish to change your interactions with peers in the future?

Feedback for future:

- What is something you learned that was surprising to you?
- What is something you learned that you are still curious about?
- What is something you learned that is still confusing to you?^{xix}



Helpful Tip



Model positive reinforcement.

Students are more likely to enjoy learning, be present in the classroom, and be enthusiastic if positive reinforcement is used to acknowledge their efforts. In addition, it models a behavior that students should use within their teams.

Pro-BL creates situations where it's more about the process of discovery rather than finding the “right” answer. It is about students needing to hear they are up for the challenge and they can do the work and do it well.

Assessing Through Practices and Routines

Practices and routines should be structured to promote active listening and reflection while maintaining a dialogue focused on the particular issue. The following techniques not only add to the quality of the learning experience but also serve as opportunities for assessment.

Agile Meetings: These are regularly scheduled opportunities to check in with students to gauge progress on projects, evaluate their learning, and strengthen relationships and collaboration. They are often conducted at the beginning and end of each week to ask students to share successes and challenges and to report on next steps for their project.

Gallery Walk: This is a way for students to provide feedback to each other on their respective work. First, it is important that students understand how to give and receive critical feedback constructively. To conduct a gallery walk: 1) present the work to be assessed either physically or virtually; 2) decide how students will provide feedback (e.g., verbally, digitally, etc.); 3) explain the criteria to be used (e.g., “I like,” “I wish,” “I wonder”); 4) ask students to assess the work; and 5) following the gallery walk and after critique is provided, ask the team who created the work to reflect on the feedback received.

Reflections: One day a week, students present status reports and reflect on their projects and their own learning. Encourage students to ask questions and to engage in open discussion.

Acknowledgements and Celebrations: Throughout projects, instructors and students share high-fives, shout-outs, and other routines to celebrate accomplishments. CAPS' Innovation Celebration showcases student work and provides opportunities to hear feedback from community and thought leaders.

Social Media Posts: Facebook, Instagram, Twitter, and other social media are used to showcase student projects and share examples of how business, community, and public education can partner to produce personalized learning experiences that educate the workforce of tomorrow for high skill, high demand jobs. Videos are used to share thoughts and ideas from the nation's thought leaders in work and education.



Helpful Tip



Measurement of students' confidence is a critical outcome and is assessed in the end-of-semester CAPS Network Survey completed by all CAPS member students.

Action Checklist #3

Put Essential Skills to Work



- Identify key learning targets for the year, semester, quarter, month, or week. Progressively increase the level at which students are challenged by leveraging both Bloom's taxonomy of thinking skills and real-world abilities**
 - Consider how students learn—the science of learning. When designing learning situations, connect cognitive principles to practical application.
 - Allow time for students to take advantage of new opportunities in learning situations as they present themselves. Do not oversubscribe.
 - Pace students by increasing the level of challenge and complexity over the course of the planning period.
 - Emphasize the process, not the outcome when designing the learning experience.
 - Combine content within context.

- Select technical and essential skills you want the students to practice**
 - Assess the maturity of the students' willingness and ability to engage in the specific experience.
 - Provide options and choices that promote the students' exploration of their strengths and passions.
 - Design opportunities in which students may experience failure and recovery.
 - Document the definition, the why, and tips for applying the skill.

□ Design the learning situation

- Optimize authentic challenges and work products.
- Utilize teams when possible to generate creative tension.
- Encourage multiple iterations of the product; not “one and done”.
- As an instructor, balance structure in teaching with student empowerment.
- Design experiences that blend the application of multiple skills into a single experience.
- Leverage processes such as Design Thinking to teach approach and strategies for finding solutions to problems or opportunities.

□ Assess the experience as a professional experience; not an academic exercise

- Use multiple measures to assess students' learning.
- Assess students' ability to apply essential skills rather than just assessing the knowledge of technical content.
- Assess students' ability to apply a process to problem-solving.
- Plan for scale. Build a routine and develop customized tools to observe and track performance.
- Ensure assessment leverages both the student self-assessing their learning, and peer assessment.
- Students should be assessed on their own growth and not measured against their peers.

Resources & Tools

Note: Since CAPS programs are always evolving, growing, and fine tuning, Resources & Tools files will likely evolve and change periodically.

General Research & Resources

Getting Smart

GettingSmart.com is a media channel that provides a place for education leaders to share innovations in learning and build a community driven by equity and access.

[Click here to view website](#)

Next Generation Learning Challenges

Accelerates educational innovation through applied technology to dramatically improve college readiness and completion in the United States. NGLC is working to reinvent education: exploring new models, technologies, and pathways to student success.

[Click here to view website](#)

OECD

The Organization for Economic Co-operation and Development (OECD) is an international organization that works to build better policies for better lives. Their goal is to shape policies that foster prosperity, equality, opportunity and well-being for all. They draw on 60 years of experience and insights to better prepare the world of tomorrow.

[Click here to view website](#)

PBL Works: Buck Institute for Education

Get inspired by PBL Works' expanding library of Project Cards that are standards-aligned, and cover a range of grade levels and subject areas.

[Click here to view website](#)

World Economic Forum

The **World Economic Forum (WEF)**, based in Cologny, Geneva Canton, Switzerland, is an international NGO, founded on 24 January 1971. The WEF's mission is stated as "committed to improving the state of the world by engaging business, political, academic, and other leaders of society to shape global, regional, and industry agendas. Search the WEF for information on the future of work.

[Click here to view website](#)

US Bureau of Labor Statistics/ Occupational Employment Statistics

The **Occupational Employment Statistics (OES)** program produces employment and wage estimates annually for nearly 800 occupations. These estimates are available for the nation as a whole, for individual states, and for metropolitan and nonmetropolitan areas; national occupational estimates for specific industries are also available.

[Click here to view website](#)

Resources for Design Thinking

IDEO

IDEO is often asked to share what they know about design thinking. They have developed this website in response to that request. IDEO introduces design thinking, how it came to be, how it is being used, and steps and tools for mastering it. You will find IDEO's particular take on design thinking, as well as the perspectives of others. Everything on this site is free for you to use and share with proper attribution.

[Click here to view website](#)

[Click here to view website for design thinking for educators](#)

Resources on Assessments

Grace Belfiore and Dave Lash, "Assessment Design for Broader, Deeper Competencies: MyWays Report 12", MyWays, October 2017.

[Click here to view guide](#)

Blogs

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[Click here to view blog](#)

Michael Hernandez, "Evaluation Within Project-Based Learning," Edutopia blog, Jun. 6, 2016

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John Larmer, "Gold Standard PBL: Assessing Student Learning," Gold Standard PBL: Teaching Practices blog, Feb. 18, 2016

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Harry S. Campbell, *Get-Real Culture A Practical Approach to Creating a Wildly Successful Workplace*, Harry S. Campbell 2016

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Julia Freeland Fisher, *Who You Know: Unlocking Innovations That Expand Students' Networks*, Jossey-bass, 2018

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Alice Y. Kolb and David A. Kolb, *The Experiential Educator: Principles and Practices of Experiential Learning*, EBLS Press, 2017

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