

Diving Into Profession-Based Learning



A guide to designing
and implementing
profession-based learning



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A growing number of educators around the world believe that project-based learning (PBL) is an important instructional approach that enables students to master academic skills and content knowledge, develop skills necessary for future success and build the personal agency needed to tackle life's and the world's challenges.

Tom Vander Ark, CEO, Getting Smart

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About this Module

Get ready! CAPS takes education to a whole new level by expanding the boundaries of learning beyond traditional and physical classrooms. Profession-based learning means students explore their future in a unique way. It's learning that ignites and celebrates innovation, creativity and problem solving. It's filled with incredible mentors, speakers, students and instructors who make learning engaging, fun and interactive! Imagine creative problem solving on steroids.

Planning and structuring projects does take some work though! Grab some caffeine, sit back and dig into this Module. This Module draws on the experience of CAPS Network affiliates (CAPS affiliates) and community partners (project partners) to guide you and your team through planning, organizing and securing student-led projects.

Inside this Module

This Module answers questions, offers guidance and takes the mystery out of CAPS' profession-based learning model. Essentially, this tool serves as a coach. It provides insights, best practices and resources and tools to help guide your efforts.

As you read through the Module, you will see sections of content and icons that draw your attention to very specific information that you might be craving. Look for the icons or headers below when you want to get started quickly, gain peer insights, when you need some helpful tips and when you need a template or checklist for a task at hand.



Insight

CAPS affiliates and community partners share their experiences and best practices with a specific component to profession-based learning.



Helpful Tip

Helpful Tips offer advice and experiences based on best practices learned from practitioners around the country.

Action Checklist: The Action Checklist serves as a quick-start guide. A checklist follows each of the three steps to building community partnerships. They're designed so you can dive right in and come back to the content later, if needed.

Resources & Tools: The [Resources & Tools](#) section at the end of this module contains contact information of CAPS champions, websites, videos, blogs, CAPS affiliates' tools and more to make your job a little easier. Why reinvent the wheel, right?

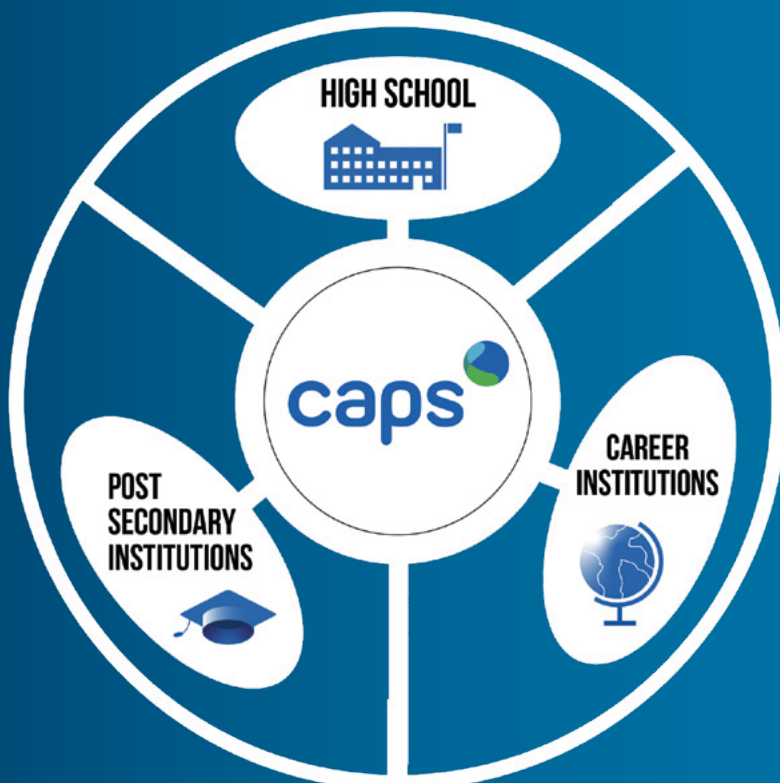
Remember, this is a guide. A huge value of being a CAPS affiliate is the collective knowledge of ALL involved. So be sure to check out the Insights throughout, as well as the Resources & Tools section. Reach out to other CAPS affiliates. Email us with questions or comments:

Gregg Brown, CAPS Network Coordinator - ghbrown@bluevalleyk12.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 students, as well as 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.
- **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.
- **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.
- **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.

Profession-Based Learning

Preparing Students to Contribute in a Project-Based World



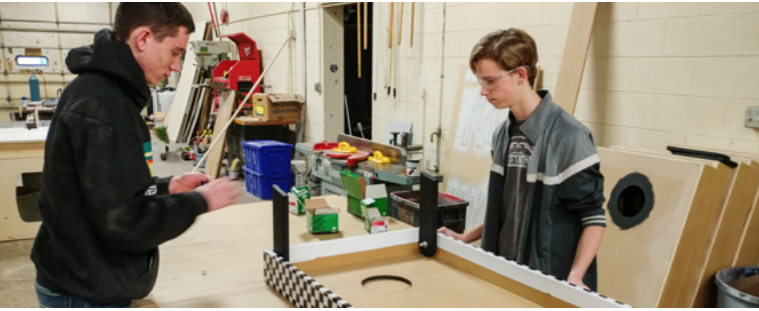
Ask CAPS students about their experience with profession-based learning (Pro-BL) and they will tell you it is transformative. They are inspired to think differently about themselves as learners, collaborators and leaders. Pro-BL at CAPS means students get to explore their future in a unique way. They learn by immersing themselves in projects they are passionate about. Community partners benefit by having students work on real-world problems that need creative solutions. This approach to learning creates a dynamic and exciting energy between partners (a/k/a clients), students and instructors.

Insight

“
Profession-based learning is the highest form of experiential learning at the secondary education level.

Gregg Brown,
CAPS Network Coordinator

When referring to community partners throughout this module, we mean anyone outside the school system who engages or could engage with students on projects. In addition to for-profit businesses, this could mean hospitals, non-profit organizations, a higher education institution, or an individual.



Why PBL

Project-based learning (PBL) is a growing and highly effective method of instruction. Research supports an increase in student engagement and achievement when they participate in this type of learning. Thought leaders and nationwide education innovators such as [Next Generation Learning Challenges \[NGLC\]](#), [XQ SuperSchools](#), [P-TECH](#), [Buck Institute for Education](#), [The Colorado Education Initiative](#) and [America Achieves Educator Networks](#), present compelling evidence that employers are seeking job candidates who, in addition to education credentials, possess the knowledge, skills, disposition and character that will help the company or organization achieve its goals. Research by these innovators shows that over the next decade, demand for social, emotional and higher cognitive skills, along with demand for technical skills, is expected to grow significantly.

According to the Buck Institute for Education, “By presenting students with a mix of choice and responsibility, cognitive concepts and practical activities, within an environment of real world authenticity, projects engage students in learning that is deep and long-lasting. Seeing a real-world impact gives students a sense of agency and purpose; teachers work closely with active, engaged students doing meaningful work and share in the rediscovered joy of learning; students are solving problems that are important to them and their communities; project-based learning projects lead to deeper understanding and greater retention of content knowledge. Students are better able to apply what they know to new situations.”¹¹

The Buck Institute for Education

(BIE) vision is that all students—no matter where they live or what their background—will have access to high-quality project-based learning (PBL) so they deepen their learning and achieve success in college, career and life. This vision is driven by a belief that:

- PBL prepares students for academic, personal and career success. What’s more, it readies young people to rise to the challenges of their lives and the world they will inherit.
- PBL leads students to master core academic content and builds critical thinking, problem solving, collaboration, communication and self-management skills.
- PBL advances educational equity and empowers youth furthest from opportunity.
- PBL enables teachers to make a difference in their students’ lives—academically, socially and emotionally—and to experience the joy of teaching.

“Preparing Students for a Project Based World”,
Bonnie Latham, Bob Lenz and Tom Vander Ark

Viewpoints on Benefits of Profession-Based Learning

Student's Point of View

- Is **centered on the learner** and is **motivated by their interests**.
- Encourages **collaboration and cooperative learning**.
- Offers a **degree of independence** not afforded them in traditional classrooms.
- Requires students to **produce a product, presentation, or performance**.
- Allows students to **make incremental and continual improvement** in their product, presentation, or performance.
- Is designed so that students are **actively engaged** in **"doing" things** rather than in "learning about" something.
- Is challenging; focusing on **higher-order skills**.
- Is **transformative**, inspiring students to think differently about themselves as learners, collaborators and leaders.
- Prepares students for **academic, personal and career success** – to rise to the challenges of their lives and the world they will inherit.
- Leads students to **master core academic content and builds critical thinking, problem solving, collaboration, communication and self-management skills**.

Instructor's Point of View

- Enables instructors to **make a difference in their students' lives**—academically, socially and emotionally.
- **Empowers students** to seek a solution to the challenge or problem.
- Has **authentic content and purpose**.
- Uses **authentic assessment**.
- Is teacher facilitated--but the teacher is much more a **"guide on the side"** rather than a "sage on the stage."
- Has **explicit educational goals**.
- Is rooted in **constructivism** (a social learning theory).
- Allows the instructor and students to provide **formative evaluation**.
- Allows the instructor, students and others to help in the **summative (final) evaluation**.

Business's Point of View

- Introduces innovative, **fresh ideas and talent**.
- Introduces the business to an **upcoming workforce**.
- Allows the business to **contribute to the needs and wants of tomorrow's workforce**.
- Engages students in real-world issues, allowing them to lead to **foster community change**.ⁱⁱ

Adapted from *Problem-Based Learning and Project-Based Learning*, and Lathram, B., Lenz, B., and Vander Ark, T., *Preparing Students for a Project-Based World*, Getting Smart, August 2016.

CAPS – Profession-Based Learning Model



There are many variations or types of PBL including project-based, problem-based, challenge-based, design-based and more. Each of these types of learning has its own distinct flavor and specific context for learning, such as a type of activity, but elements or procedures used to describe them can overlap. For example, problem-based learning may focus more on the use of case studies and simulations to solve a problem such as learning to use Excel to solve a buy/lease problem. Project-based learning may contain some of these elements, but contain more formalized steps for solving a problem.

CAPS focuses on profession-based learning (Pro-BL).

Pro-BL is a pedagogical approach in which students spend a semester or more demonstrating their skills and knowledge to solve real-world problems. Projects are profession-based, which means CAPS leverages strong community partnerships that offer real-world learner-centered projects. These projects create a bounded environment [or sandbox] in

which students can experiment with ideas and work through simulated scenarios that hew closely to the kinds of problems they will work through in the professional world. Students immerse themselves in a learner-centered professional culture. They work on projects they are passionate about while using industry standard tools. Through this process, they have an opportunity to problem-solve and increase knowledge through collaboration with peers, instructors and community members. At the end of this process, students have the opportunity to demonstrate their knowledge and skills by working together to develop a product or presentation that they then share with an audience. This process facilitates students' development of content knowledge, critical thinking skills, creativity, team-building and communications skills while simultaneously giving them the opportunity to deliver a tangible result.

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 problem(s) 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/buy problem requiring the use of Excel	Alleviating poverty in the local community	Developing a social media strategy for a new non-profit organization

Steps, Insights and Tools

Pro-BL engages students in a way that is deep and long-lasting. Instructors and students work side-by-side with community partners to create a learning experience that engages students in meaningful work, builds personal connections and gives back to local communities. Following are steps, insights and tools designed to provide a guide to developing a Pro-BL model of learning.



Successful PBL encompasses a commitment to a consistent process, a focus on relationships and a commitment to relevance and rigor. **The Pro-BL model of learning takes a team**—instructors, students, community partners, administration—each embracing a holistic, open-minded pedagogy.ⁱⁱⁱ

1 Cultivate the Culture & Prepare Your Team

Create a Supportive Culture for Profession-Based Learning

Embrace an Entrepreneurial Culture

For successful Pro-BL, an entrepreneurial culture is imperative. At CAPS, embracing an entrepreneurial culture is part of our DNA. It is part of our Core Values. Successful CAPS programs foster an environment of empowerment where people can empower themselves—act entrepreneurially by taking the lead and facilitating positive change. Let all involved—instructors, students, administrators, district leaders and community partners—know that an entrepreneurial approach is valued, encouraged and rewarded; new ideas are welcome and considered; lines of communication are always open; flexibility is a given; and that some ambiguity is to be expected.

Create the Right Classroom Culture

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.

Give Students a Voice

Projects are student-driven. They are reflective of the student's interest, passion, other students they would like to partner with, the companies they would like to work with and the types of projects they are drawn towards. To know this, we must give students a voice—a chance to be heard. Asking for student input, feedback and a reflection of their learning is built into the instructional design.



Create Excitement & Showcase Efforts

Instructors, students and community partners need to be excited from beginning to end to make it through the design and implementation process. One way to create excitement is to showcase student work through events that feature their work. Opportunities to showcase student work to the public is a chance to connect, build relationships, to reflect and to celebrate. These events could include an awards celebration, taking students to partners' businesses to present, recognition for contributions, shout-outs on social media and so much more. Use your imagination. Remember to celebrate instructors and community partners.

Encourage & Participate in Professional Development

CAPS instructors, administrators and staff are encouraged to leverage the CAPS Network for professional learning that leads to both instructor and student growth. Each year, CAPS hosts the [CAPS Summer Huddle](#) convening K-12 stakeholders interested in innovations in education and approaches to authentic, Pro-BL strategies. The 2017 Summer Huddle attracted over 120 people from across the country and created a dynamic networking opportunity. It never disappoints. Other organizations such as the [Buck Institute](#) also offer an array of resources on project-based learning and professional development—from blogs to workshops.

The CAPS Network recently released a series of micro-credentials for instructors to further improve their practice while receiving badges of recognition for the mastery of specific CAPS Core Values. The micro-credentials are hosted by Digital Promise and can be accessed [here](#).

Meet & Plan

Set meeting times provide periods for instructors, staff and community partners to debrief, share concerns and successes, and plan and prepare for the current and the next semester of projects. For example, instructors may meet to discuss assessment, student engagement and community partnerships. These platforms often draw out areas in which help is needed or shed light on an innovative approach to Pro-BL. These opportunities to meet are instrumental in keeping the momentum going.

Get Your Community on Board

Whether you are a new CAPS affiliate or are expanding your base of community partners, there are proven strategies that can get your community partners on board. Social media—Facebook, Twitter, and Instagram—are great venues to introduce partners to Pro-BL, share the benefits of this type of learning and highlight student projects. Invite both potential and existing partners to take part in Pro-BL events that showcase students' work. Blue Valley CAPS annual [Innovation Celebration](#) event has raised awareness and thousands of dollars over the years to support student projects and programming. This event showcases student projects and gives students, instructors and clients a venue to talk about their experiences.

Commit to the Culture

CAPS' Core Values, listed at the beginning of this Module, are shared on affiliates' websites, on brochures and flyers and 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 communicates a clear and consistent message to your local community and others. Most importantly, these Core Values are embedded in our instruction, curriculum, school policies, school procedures and more.



Helpful Tip

- ✔ Consider hosting an annual fundraising event showcasing students' work. Each year, Blue Valley CAPS hosts an [Innovation Celebration](#). This student-executed fundraising event features students' work from across Strands and provides students, instructors and clients an opportunity to share their experiences and generate excitement throughout the community.

Prepare Instructors & Align with Community Partners



Instructor Qualities, Skills & Practices

Below are qualities, skills and practices that CAPS instructors bring to the Pro-BL approach to learning. This section examines the learning model at a 30,000 foot level. More detail about the elements of Pro-BL can be found in Section 2 of this Module.

Instructors ignite excitement around learning. They seek to understand their students and where their passion lies, encourage communication by giving students a voice, and create an environment that invites students to be expressive in the context of learning. CAPS instructors break away from the traditional instructor and student roles to create a different learning experience.

To break away from traditional teacher roles, **teachers must:**

- **Be able** to provide support, empathy and inspiration
- **Facilitate** thinking, growth and engagement
- **Generate classroom activities** based off of understanding students
- **Feel safe to experiment** and free from strict time constraints

The Role of the Teacher in High Quality PBL,
Michelle Berkeley



Project Alignment - Students & Community Partners

An important instructor quality is the ability to know and understand the community partner's goals and vision for the project and to guide the process of aligning students with those goals. Instructors work alongside students to identify the team members who will deliver an amazing experience. They guide the process of asking the right questions that expose assumptions, values, ways of making decisions and preferences, providing a gateway to understanding one another and building trust. Project alignment is about building the right team to deliver the best product while creating an enriching experience.

Project Management Mindset

Instructors have a project management mindset and take on the role of project manager. A project management mindset means instructors are capable and willing to keep the outcome of the project at the forefront, track details and check in with students. They keep the lines of communication open and flowing.

Knowing Everything Is Not an Expectation

Projects are often multi-faceted, requiring a breadth of knowledge. CAPS instructors are NOT expected to know everything about every aspect of a project. Instructors are successful and embrace Pro-BL when they are "given permission" from both administrators and students' caregiver(s) or parent(s) to learn alongside students.

Mastering Facilitation

Prepared instructors need to be great facilitators. They know how to design and implement student experiences that align with CAPS Core Values. They build cultures of communication and ask probing questions that promote deeper learning.

Guiding on the Side

CAPS instructors create a collaborative environment in which projects are student-led with instructors providing guidance when necessary. This breaks from the more traditional model of teaching and instructor roles in which instructors hand out assignments and lead the learner. Instructors set goals with students and encourage and allow students to explore the topic and create their project. Students are encouraged and expected to work directly with community partners to establish project goals and to be clear about expectations. It means students have a direct relationship with the client. They present and/or select their projects, meet with clients directly and manage their own time. Instructors attempt to remove themselves from the student-client relationship other than to serve as a coach.

Managing Expectations

In Pro-BL, "nearly everything you do has people management ramifications. This begins with norms and performance expectations, agreements on behavior, and clear directions. But other elements contribute just as much: (1) a clearly stated Driving Question that captures imagination and starts the project in the right direction; (2) a consistent explanation of the why behind the project; (3) an air of experiment, problem solving, and discovery; and (4) a promise that, at the end of the project, the results will matter to someone besides the teacher or the test designers." (Markham, 2016)^{iv}

Creating a Culture of Care

In *7 Essential Skills for PBL Teachers*, Thom Markham writes that “the underlying dynamic that drives better performance in PBL is a personalized classroom culture in which every student feels known, respected, and communicated with. This isn’t just a nice thing to do; it’s the known result of years of youth development research that demonstrates that a culture of care allows you, as the teacher, to assume a mentor role. The mentor role allows you to both ‘push’ and ‘pull’ students through the ups and downs of the PBL process. If you’re not in that role, you will find it difficult to move from a classroom manager to a project manager, a crucial shift for successful PBL.”^v

Empowering Students

In the CAPS model of Pro-BL, instructors consistently communicate with students: focusing on their strengths, encouraging their efforts, and pushing them to do their best work. Constructive criticism is given respectfully and with the intent of fostering learning.

Embracing Ambiguity & Flexibility

CAPS instructors must be comfortable with ambiguity. Learning is not rigidly structured through a rubric. Students are encouraged to explore and learn. This means classrooms can seem “messy” compared to the traditional approach to teaching. And that’s okay.

Encouraging Through Reflection

Building in time for reflection, either formal (built into an assessment) or informal, helps students think about their experience on projects and can provide valuable insight into teaching methods. This can take the form of one-on-one meetings, group discussion, emails, student journaling, peer review, or by using project management software such as Basecamp. (More about Basecamp is provided later in this Module.)

Letting Go of Time and Hard-Core Structure

CAPS instructors are comfortable letting go of old classroom models where bells ring and tests are given and graded. They are supportive of the time students need to digest and work on a problem and supportive of the process it takes to develop a real-world presentable solution.

Encouraging Teamwork

Pro-BL at CAPS is all about teamwork. That means that each individual student is responsible to the larger team working on the project. Each student understands that the success of the project relies on each individual team member taking responsibility for their actions, deadlines and role. Students and instructors are each held accountable. Many instructors at CAPS drive this home by including this component in their assessment tools.

Openness to Failure

While CAPS programs can share case study after case study of student success, at times, projects fail. Like in the real world, this is okay. Often more is learned through failure than through success. If or when this happens, CAPS instructors encourage students by being supportive, empathetic and inspirational to each other and their students.



Insight



Some of the best learning experiences are those in which a project fails. Don't be afraid for students to experience some level of failure.

Gregg Brown,
CAPS Network Coordinator

Community (Project) Partner Qualities, Skills & Practices

Cultivating the right relationships is important to positive student experiences. With the right relationships, a student's education and experiences can be transformed. The key is making sure the partner is a good fit with your program's culture, students and processes. Below are qualities, skills and practices that successful community partnership relationships bring to CAPS.

Time Commitment

Well-suited community partners are willing to commit the time necessary to meet with students, instructors and others to explore an idea for a project and follow-up and engage throughout the project. They agree to hear students' final presentations at the end of projects.

Project Alignment

Strong community partners identify projects within their businesses that are best aligned with students' capabilities and timeline. However, they recognize this is a learning process and are open and patient by providing students an opportunity to learn new skills.

Collaboration

Great community partners collaborate with instructors and students to bring meaningful, worthwhile work projects.

Embracing Excitement

The best partners engage in the learning process with students and embrace the excitement of student learning. Educators work alongside community partners to create learning environments that are fun.

Constructive Feedback

Community partners should understand the value of and provide constructive feedback both throughout and at the end of the project.



Market Awareness

CAPS instructors and community partners work side-by-side to understand how the employment market is changing, the skills and knowledge required for students to succeed in this market, the best ways for students to better understand and develop cross-sector competencies, develop business connections and increase relevance.



Helpful Tip



CAPS' Module titled **Building and Growing Community Partnerships** provides a how-to guide for identifying, recruiting and managing community partners. Please refer to this Module for an in-depth look at how CAPS programs have identified and built strong community partnerships.

Action Checklist #1

Cultivate the Culture & Prepare Your Team



- Ensure everyone has a clear understanding of CAPS Pro-BL model**
 - Review the core elements of this type of pedagogy—what it means for instructors, students and community partners.
- Reflect on & evaluate your culture**
 - Review CAPS Core Values
 - List the elements of a strong, supportive culture outlined in this Module and discuss 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.)
- Make sure instructors are given every opportunity for success**
 - Review the list provided in this Module of the qualities, skills and practices that CAPS instructors embrace.
 - Consider sending instructors to CAPS' Summer Huddle to share ideas and best practices with other instructors, administrators and community partners.
- Cultivate great community partners**
 - Work as a team to create a "checklist" of community partner qualities, then create a list of potential partners based on your list of qualities, skills and practices.
 - Consider hosting an event inviting community members to learn about CAPS and Pro-BL.
 - Include students and instructors as presenters
 - If you are a new CAPS affiliate, reach out to other CAPS affiliates and ask if they can provide project examples you can share with your potential partners.

CAPS affiliates are eager to share experiences and can provide great insight into how they design and implement Pro-BL. So, reach out! A list of CAPS champions is provided at the end of this Module under Resources & Tools.

2 Ensure Projects Align with CAPS Learning Model

CAPS' Framework for High Quality Profession-Based Learning

A key element in CAPS' profession-based curriculum is to ensure that projects are aligned within a framework that speaks to the student experience and the high quality expected of CAPS programs.

Projects can range from business services such as marketing, pricing strategy, event planning and management to creative services such as photography, graphic design or social media. Students may work on projects centered around solving engineering problems and practicing software design and development. Types of projects will vary between CAPS affiliates depending on the Strands (Bioscience, Engineering, Medicine & Healthcare, etc.) offered in your individual program. The projects should support the Strand selections and be based on the needs of your community.

CAPS projects embrace the following elements:

Critical Thinking

Projects challenge students' thinking. They encompass multiple technical and soft skills (the high range of Bloom's Taxonomy) with an emphasis on critical thinking. Critical thinking is an important skill cultivated by instructors and used by CAPS students to ask questions, solve complex problems and to address issues or challenges which may have more than one solution. To complete a project successfully, students need to learn important academic content, concepts, and skills. Profession-based projects require students work both in the classroom and outside of class over a several-week time period to produce the highest quality work possible while being guided and supported.

Real-World Application

Projects should be presented by clients who have "real" problems to solve. The key relationship is between the student and the client. This way, students learn how to communicate and work in the real-world. At CAPS, students are expected to work in teams. Working effectively as part of a team in CAPS programs means students will truly collaborate and

bring their own strengths, talents and skills to the task of solving a problem. This approach asks students to respect the contributions of others and work with people in a variety of roles: other students in person or online, adult experts in a field, community members, or members of other organizations. In the end, students share their work through a formal presentation to a broad audience: instructors, each other and experts.



Helpful Tip

- ✓ To learn more, visit HQ's A Framework for High Quality Project Based Learning in which their framework draws on hundreds of educators who share their ideas and critique of PBL. "It describes six criteria, each of which must be at least minimally present in a project in order for it to be judged 'high quality'." [Click here](#) to learn more about each of these six criteria. Each criteria provides a list of guiding questions along with an description.

Student Project Management

Whether it's on the job or in their personal lives, people work on projects and it helps to know how to manage time, tasks and resources efficiently. In high quality Pro-BL, students learn and make use of project management processes, tools and strategies similar to those used in the world beyond school. Pro-BL can be a great way to introduce students to a project management platform such as [Basecamp](#) or [Projectplace®](#).

Differentiated Method of Assignment and Assessment

Rather than the traditional approach to assignments and assessment, students are evaluated by instructors and the clients, but also learn to reflect on their own work and how to improve it throughout the process. Assessment is less about grades and more about providing feedback on the students' project work: professionalism, how well they understand the information and their ability to use constructive feedback to improve. More about assessment can be found in the Assessment and Evaluation section of this Module.

Empowerment versus Structure

Instructors should find a balance between creating structure for students and empowering students to chart their own path to project completion. In the CAPS Pro-BL model, structure is categorized more as project management with project partners taking on this role. Empowerment means students receive the resources and tools—freedom, guidance, feedback and autonomy—to solve the problem. Instructors serve as facilitators and guides throughout the process.

This also means that students face real-world experiences of having to navigate a partner's differences of opinion, workstyle, disappointment, or expectations. In the CAPS model, neither project partners nor instructors are expected to hand-hold. Students are held responsible for these interactions, with instructors stepping in only when necessary.

Personalized Learning

Empowerment at CAPS means student choose their project and/or the teams they work with. In this way, the learning is personalized.



Insight



Spending less time in the classroom and getting students out in the business setting as much as possible is the strategic way of learning.

**Ann Hopper, Coordinator,
GOCAPS Lake Region**

Alignment with Students' Skillsets

At a high level, Pro-BL is valuable because it accommodates students with varying learning styles and differences, backgrounds and experiences. It is also a chance for students to broaden their capabilities by experiencing the method and process of Pro-BL.

For each project, it is important to know the skillsets required of your students. While students develop skills as they learn by working on projects, it is important that students be given every chance to succeed. This means considering the classes or work students have done previously.

Each project will have a set of skills or capabilities that are necessary to complete that project successfully—meaning students are not so overwhelmed they feel defeated before they begin. Instructors should identify the skills students have developed and make efforts to align students with opportunities that will allow them to succeed and continue to build on learned skills while developing new ones.

Gold Standard PBL

Seven Essential Project Design Elements^{vi}



Helpful Tip

- Internships are great and provide ways for students to learn. You will find many of these relationships throughout CAPS programs. However, projects extend beyond internships offering students a way to get practical exposure and be “the boss” as they lead their project.

With Pro-BL, students learn by pursuing their own interests and passions. The emphasis is on the student to develop strong critical thinking, problem-solving, communication, teamwork and self-direction skills. The process becomes important: seeking information through researching a topic and applying information to a particular problem. Students are encouraged to take responsibility for their own learning and become life-long learners.

CAPS students across the country are providing business services in an array of areas: product development, pricing strategies, market research, brand development, event planning and management, PR/advertising strategy development, product selling and donation solicitation and social media marketing plans. They provide creative services such as photography, graphic design, 2D and 3D animation, website design, maintenance and video production and so much more. Each CAPS program engages students in projects based on their Strands and the needs of their local community.

PROJECT

The Snuggle Bean Bag for Autism

📍 Blue Valley CAPS | Overland Park, KS

Students developed a prototype, utilizing research of Dr. Grandin, to develop sensory furniture for people with autism and certain behavior disorders.

PROJECT

Design a Desk & Preserve History

📍 Westside CAPS | Omaha, NE

Students designed a desk that will be featured prominently in the new school's library and make use of 100-year-old wood saved from the school, preserving a piece of the school's history.

PROJECT

Study the Behavior of Wild Cats in Captivity

📍 Blue Valley CAPS | Overland Park, KS

Students worked with professional researchers to learn about the behavior of wild cats (lions, tigers, etc.) while in captivity.

PROJECT

E-Commerce Data Analytics on Lifestyle Images

📍 Blue Valley CAPS | Overland Park, KS

The CAPS team was challenged to 1) create and post professional and visually appealing lifestyle product images for a 500,000 square foot warehouse carrying thousands of products and 2) perform e-commerce data analytics to determine the impact of these product images to increased sales.

PROJECT

Tracking Mule Deer

📍 Wasatch CAPS | Heber City, UT

Students helped the Division of Natural Resources (DNR) with local wildlife by assisting in attaching radio collars on mule deer so the DNR can track the different deer migration patterns. Students have also been involved in setting a sand trap to capture animal prints in the wildlife underpass.

PROJECT

World of Concrete

📍 Wasatch CAPS | Heber City, UT

Engineering students worked with industry partner Verti-Crete. The team was asked to help their client create new designs for retaining wall blocks. The blocks weight approximately 1,700 lbs. The students were invited to attend the World of Concrete held in Las Vegas with their client to show off their new designs.

PROJECT

Assembling 3D Printers

📍 TCALC | Topeka, KS

Students in Engineering Applications classes have gained in-depth knowledge of 3D printer design and functions as they have assembled the Ender 3 printers that will populate the lab. Their instructional unit on 3D printing includes assembly of the printers, printer operations and object design. They will also be designing and delivering instruction to all other TCALC students on the science of 3D printing and the operation of the printers.

PROJECT

Project Management - Web & Design Pathway

📍 TCALC | Topeka, KS

A course that our pathway has never offered before is called "Project Management". A long time TPS partner, Federal Home Loan Bank, welcomed Madison Cobb & Matthew Caudill, both THS seniors, for an afternoon of shadowing this Project Management concept. Several students are now pioneering this application level course with project simulations and in house internships, as well as outside partnerships and Professional Learning Experiences (PLEs).

Action Checklist #2

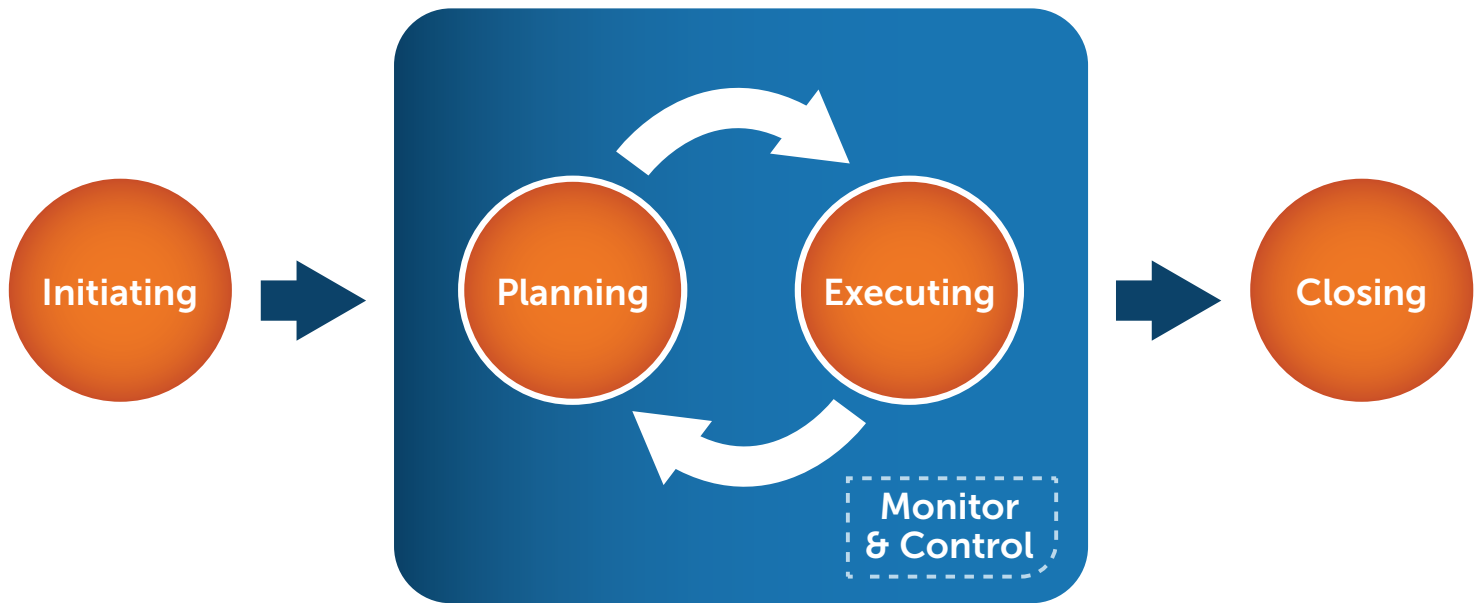
Set the Groundwork for Projects



- Solicit potential projects from community partners**
 - Ideas for reaching out: send emails, invite partners to present potential projects or host a community event inviting potential partners to view current student work.
- Compile a list of the project ideas received from clients (community partners)**
- Evaluate each project against the project elements embraced by CAPS**
 - Students would work on an authentic, real-world project with a deliverable product.
 - The project is not a make-or-break outcome for the client's business (It has languished to the 10th item on the client's to-do list).
 - The client is comfortable with students leading the project with guidance from instructors or mentors.
 - CAPS students have the basic skillsets to be successful on the project.
 - The project will challenge students (in a good way).
- Engage with students to align projects with their passion, interests and skills**
- For selected potential projects, meet with clients to discuss expectations and to document high-level requirements**

CAPS affiliates are eager to share experiences and can provide great insight into how they design and implement Pro-BL. So, reach out! A list of CAPS champions is provided at the end of this Module under Resources & Tools.

3 Design & Implement Projects



Real-world student-led projects can vary in length and complexity. While some may only take a few days and are simple tasks, others might span weeks and require significant amounts of research and content development. Regardless of the type of project, all students and their clients benefit from the use of the Project Cycle to plan their work (project plan) and work their plan.

How To:

- 1 Initiating:** All projects have a beginning. Have a meeting with the client and document requirements of the project. Take notes. Determine specific requirements to help develop a plan.
- 2 Planning:** Develop specific tasks that will achieve the requirements of the project. Make the specific tasks time-bound based on the complexity and length of the project.
- 3 Executing:** Perform the work defined in each task. Note outcomes that differ from the original plan and adjust the future tasks accordingly.
- 4 Monitoring & Controlling:** Provide on-the-spot, daily or weekly status reports on the completion of the tasks as they occur. These can be written or verbal depending on the complexity of the project.
- 5 Closing:** All projects have an end. Complete the final tasks and achieve the requirements. Summarize the experience in a report to the client. Include both "good" and "bad" news. Consider and plan any next steps for continuation.

Recruiting Clients (Partners) and Projects



CAPS Building and Growing Community Partnerships Module provides an in-depth guide for engaging community partners. We urge you to take a little time and review that Module if you are new to recruiting and retaining partnerships.

When to Start Recruiting

Recruitment time can vary between CAPS programs. A good rule of thumb is to begin recruiting community partners at least six weeks before the start of a semester. Time is needed for potential clients to gain an understanding of the CAPS model and to identify projects and begin thinking about aligning projects with students.

Introduce Clients to CAPS Learning Model and Expectations

Orientation sessions are a great way to introduce project partners to CAPS and to provide them with an opportunity to understand the CAPS program, process, meet with instructors and ask questions. It is also a great time to talk about expectations. Working with students may be a new experience for some clients. They are more accustomed to contracting for services where contractors are expected to be experts in their field and deliver a viable, “marketable” product. Clients need a clear understanding that projects are student-led and student-managed.

Be sure to emphasize that this is not an internship program requiring a large time commitment from the business partner, but that clients will need to meet with students periodically to answer questions, provide insights and monitor progress.

Be clear with clients that instructors contribute by providing learning opportunities for students in the classroom, then take the role of facilitator providing guidance when necessary and checking in on progress throughout the project. Emphasize that the working relationship is between the client and the student.



Insight



At GOCAPS, students are set up in job rotations with potential partners. Students spend eight weeks in a Bootcamp developing soft skills. Students are then interviewed by the company’s human resource department and if, after that point, the company has project work, students are sent on two-week rotations at a company or organization for a total of seven rotations to learn more about the company and its projects.

Ann Hopper, Coordinator, GOCAPS



Helpful Tip

Invite project partners to:

- ✓ Attend a client orientation session (dates, times, RSVP)
- ✓ Prepare a 1-2 minute project pitch to be recorded during orientation that will be used to present potential projects to students
- ✓ Commit to 3 face-to-face meetings with your student project team to facilitate communication

Some CAPS affiliates offer an orientation session as an introduction. For some, this session is mandatory. During the orientation, potential clients pitch a project to CAPS instructors. The pitches are video-taped and used to introduce the projects to students, allowing them to learn more about the partner's organization and the project before they make a project selection. This is also a great way to discover what partners are working on within companies or organizations throughout your local community.

Other sites have created a boot camp in which students visit businesses and are interviewed by the business's human resource department. If both the student and the potential client have an interest in pursuing the working relationship, students are sent on rotations to spend time with the client to learn more about the business and their projects. This is a great way to introduce potential clients to CAPS and for clients to develop a comfort level with the skillsets and passions of the student.

Presenting Client Projects to Students

Identifying and selecting projects often starts with focusing on an individual student's or group of students' interests. Instructors are encouraged to invite students to present a problem or opportunity they want to tackle and where they believe they can have an impact. Instructors take this information and align students and projects.

CAPS programs approach presenting projects to students in various ways. These are examples:

- **Clients present projects and students choose.** As stated above, for some, clients pitch ideas during an orientation or a set time established by the CAPS affiliate. Those ideas are video-taped, and students and instructors use the videos to select projects.
- **Students lead.** In other cases, students come forward with an area of interest, talk with community partners and participate in tours of their businesses, ask if their idea is a real issue or concern (or of interest to the partner) and ask if they can tackle the problem.
- **CAPS affiliates assign someone to recruit.** Extensive networking can lead to lots of projects. Some CAPS affiliates, such as MNCAPS, meet with potential clients on a regular basis. After the initial meeting, the client discusses potential

project ideas with their internal team and presents them to the CAPS coordinator. The client presents a problem statement, key outcomes and deliverables which are discussed during a second meeting. Once projects have been identified, the coordinator documents key information, creates a questionnaire and presents 12 project opportunities to students. The students are presented the projects, asked to identify three they envision themselves working on, then answer written questions asking what skills they believe they can bring to the project. This helps to discover the students' skillset and interests and aligns students with projects.

- **Students identify research opportunities.** In Strands such as bioscience, selecting projects may look a little different. At Blue Valley CAPS, projects in this area are more research-based. Students identify a research question, review literature to understand how people are trying to solve this problem, then come up with an experiment to find a solution to that project. They then reach out to the community to find a researcher or mentor who can guide them through the process.

With respect to the solicitation, vetting and selection of projects, while instructors focus on securing projects within the discipline they teach, i.e. business or engineering, they attempt to offer a wide range of options for the students to make their choices.



Insight



Start by reaching out to potential project partners in your own school or district

Continually ask for partnerships - consider sending a newsletter highlighting student projects and successes

Match students to projects based on their interests or skills

**Dawn Nizzi, Program Director,
Westside CAPS**

Aligning Projects With Students

Aligning projects means considering students' passions, interests, skillsets and experience as they relate to the project to better ensure there is a path to success.

Projects should first be scoped by instructors. Considerations include the time the students can devote to the project and the appropriateness of the project (students' area of interest, skillset and experience).

From the client's point of view, consideration should be given to how mission-critical the project is to that business. If the project is a high priority for the business and a clear, marketable solution is necessary, it may not be appropriate for students to undertake. Be clear with business partners that you are asking for projects that are "10th" on their list. Those tend to be projects that are important but not urgent and will provide a valuable learning experience for your students. It is unfair to place students in a situation where the work carries significant downside risk.

Insight

“

Have a variety of projects to offer each semester to reach all students and their interests.

Find a champion within the partnering organization who can be the advocate for ensuring the business follows through on projects. This better ensures the students will have a good experience.

Eric Sill, Coordinator, MNCAPS



Establishing Project Requirements

Both students and instructors will need a clear understanding of what the project is about and what the client wants in the form of measurable goals and documented needs and expectations of the client—the project requirements. In plain English, project requirements describe the characteristics of the project's end product. Students working on the project will want to meet with clients to establish the project requirements.

Every requirement should be **SMART**:

- **S—Specific**
 - To make a requirement specific, get answers to: Who? What? Where? When? Which? Why?
 - Avoid ambiguous words like the following: obviously, clearly, certainly, some, several, many.
- **M—Measurable**
 - Establish concrete criteria per requirement so that at the delivery of the requirement it is clear if the requirement is met or not.
- **A—Agreed-to**
 - Use plain language so all stakeholders can understand and agree to the requirement. Avoid acronyms and technical jargon.
- **R—Realistic**
 - Make sure it is technically feasible and physically possible within the project boundaries (time and budget).
- **T—Testable**
 - Make sure the project is time bound.

Insight

At CAPS LAUNCH in Brookfield, WI, local companies invest into a membership which covers the cost of authentic projects driven to meet their needs. It works much like a consultant fee for student consultants to work on projects throughout the year. “Investing in the CAPS program gives them access to talent. Companies are seeing the relationship between schools and business differently. We discuss how our students bring value to the company.”

Dr. Robert Hall, Executive Director, LAUNCH

Reflective listening is an excellent skill to use during this phase. Work with students to ask the right questions to understand the need. Once the client has articulated their need, repeat the information back in SMART language to explain what you think the need is and ask the client to confirm or correct the statement.

Skillsets and Capabilities

CAPS offers unique experiences that 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. It is one of CAPS' Core Values.

Pro-BL offers a proven strategy to develop skill competency in creativity, critical thinking, collaboration and communication—the 4Cs that business leaders have identified as crucial skills for a competitive workforce.

Projects should encompass the list of skillsets below. These skillsets should be assessed before, during and at the conclusion of each project.

Insight

Let students work on the projects they want to work on.

Gregg Brown, CAPS Network Coordinator

Technical Skills

Through Pro-BL, students are spending classroom time and group work learning about important content through experiences that emphasize the 4Cs.

Projects should provide students with an opportunity to:

- Garner information from a variety of sources
- Form their own conclusions based on analysis of information
- Problem-solve on issues that may not have one single solution
- Constructively critique each other's work and provide valuable feedback

Professional Skills

In addition to professional or career skills that require some technical knowledge, projects, by their nature, build students' professional skills. Students are assessed on their professional skills including, but not limited to:

- Valuing business partners' time
- Being engaged
- Being respectful even when you find out that industry or project would not be your passion
- Dress code
- Cell phone use
- Verbal communication

- Non-verbal communication
- Conflict management and resolution skills

These skills should be built in to assessing outcomes so that students can be mindful of practicing professional skills and understanding expectations.



Helpful Tip

Develop a project intake protocol. Communicate project capacity to your client and lay out the timeline for project work. The timeline will likely differ by academic discipline.

- ✓ Articulate expectations for clients from the beginning. At a minimum, clients should be available to meet with students at the start of a project to identify parameters and at the end for a formal reporting of results. They will also need to serve as a resource as the project progresses.
- ✓ Multiple check-in points between student project teams and the client keeps the number of surprises to a minimum and allows for pivoting.
- ✓ Help students recognize and avoid project scope creep.
- ✓ Utilize a project management tool for the duration of the project. Look for tools that allow for task and time management, team collaboration and reporting on a platform. These types of professional software free instructors from the day-to-day communication with business partners while allowing them to monitor the students' progress.
- ✓ Remember, every interaction with the client is an opportunity to practice professional skills.



Insight



Know your students. Know who is truly interested in taking on this project. If students are interested in taking on a project in which they have no prior skills or knowledge, make sure they are teamed with staff who are willing to work with these students so they can learn.

**Dawn Nizzi, Program Director,
Westside CAPS**

Forming Student Teams

CAPS affiliates have found that project teams comprised of three students is optimal for learning, but is not a hard and fast rule. Each project is different. Often, students will form their own team based on their interests or skillsets and the requirements of the project. Team formation should be strategic.

Projects Across Strands

Real-world projects often require expertise from a number of disciplines to get the job done. At CAPS, instructors and students collaborate across Strands when needed to bring the knowledge and skills required to be successful. Some of the best Pro-BL experiences are when teams can be formed with students from two or more Strands to address an interdisciplinary opportunity or problem.

Training the Team on Project Management Skills

Pro-BL gives students an opportunity to build on their project management skills. As instructors, your role is to guide students through the project management process and help them hone their project management skills. It begins with what you and the students want to accomplish, where you are going and what it will look like when you are finished. It also involves breaking the project down into tasks with clear deadlines. You identify your tools and, because students are working collaboratively, divide up the roles and responsibilities.

Project management will have its ups and downs and the process will not be perfect. Students will struggle to meet deadlines. Disagreements will occur among team members. One student will feel they are doing all the work while other team members are procrastinating. Project management is a skill that improves over time.



Helpful Tip

- ✓ A potentially beautiful project launch can go up in flames the second you distribute four-page directions.

Hacking Project Based Learning: 10 Easy Steps to PBL and Inquiry in the Classroom, Ross Cooper & Erin Murphy



Insight



A unique element of our program is the real-world experience. If clients are not happy with the results of the project, we either 1) decide it is not the right relationship, or 2) re-do the project. At times, we combine student teams of three to five students to tackle the project. This brings more skills and new ideas.

Dr. Robert Hall, Executive Director, LAUNCH

Setting Goals

Students will need a clear understanding of where they are going and how they are going to get there. Once they have a solid understanding of what they are doing and where they want to go, they can set goals. The goals can include both learning and project goals.

Ask students to set goals for the project after discussing the requirements for the project/product with the client. Once goals have been established, tasks can be assigned to each team member.

Assigning Tasks and Deadlines

Breaking the project down into tasks (concrete actions) and assigning those tasks with deadlines makes the project real. It is the next step after conceptualizing the project. Students will need to think realistically about what is needed in terms of resources: time, money, etc. Refer to the SMART criteria discussed earlier in this Module.

Thinking Strategically

During this step, students determine how they will implement their specific strategies for completing their tasks. They will determine the resources needed and what processes they will use to complete their assigned tasks.

Monitoring and Adjusting

The best-laid plans do not always work according to plan. Life happens: illness, school commitments, etc.



Insight



Create a system so problems can be caught early. Whether it's on the business' side or the students' side, you want to catch issues out of the gate so they don't snowball.

Eric Sill, Coordinator, MNCAPS

During these times students will need to hone their problem-solving skills to deal with these various issues. It is a great learning opportunity and a chance to apply critical thinking. Instructors should encourage the students to communicate if they are struggling to meet deadlines or complete a task.

Teamwork

Projects require that tasks are accomplished on time, efficiently and effectively. To do this requires good project management skills. Spend time with students to emphasize the importance of teamwork and what that means. Students are accountable to each other and to the project and the community partner that originated that project. That means each team member is committed to the project, task, and team. Team members develop a level of trust, belonging, and working relationship, and are comfortable dealing with and resolving conflict, should it arise. Each member is committed to get the job done.



Project Management is challenging. Bringing a project to completion on time and "within budget" requires both a great attitude and structure. Without a structured management process, projects become unwieldy and critical tasks cannot be identified and completed. Applying the Agile project management framework can organize energies on the right tasks that lead to a successful project.

From CAPSules

Project Management Tools

Project management tools, as mentioned under Student Project Management, help to ensure projects are implemented effectively and efficiently. The tool does not need to be a sophisticated software program, although there is some great online software. An Excel spreadsheet can show the task, the team member responsible for the task, the deadline and progress.

Basecamp

Basecamp is an online project management tool used by many CAPS affiliates. Although it is not free, it can be a valuable tool. It organizes communication into one location rather than scattered in emails, chat threads, Word docs, etc. Basecamp is used to discuss ideas, upload documents, notify team members of upcoming meetings and so much more. It is a one-stop shop for all the things teams do together. More information on Basecamp can be found at basecamp.com.



Training the Team on Technical Skills

Each and every project requires a set of technical skills customized to the specific project and student. Technical skills are associated with each CAPS Strand: for example, how to use certain equipment, how to conduct research, or how to conduct a focus group. They are the abilities and knowledge needed to perform certain tasks.

For each project, it is very important to identify the technical skills up front that will be necessary to prepare students for the work ahead and to complete the project. Classroom time and instructor “one-on-one” time with student teams is used to teach these foundational technical skills.

1. Review the Project Requirements to understand the technical skills that might be required.
2. Review the list and assignment of tasks required to complete the project: Do the students have the training and/or knowledge to complete the task? What other training and/or knowledge might be required?
3. What do students want to know that would help them feel more comfortable working on the project?
 - Consider inviting guest speakers to talk on a specific topic about a specific skill.
 - Provide opportunities for students to engage with the topic: podcasts, online games, interactive activities, or experiments.



Developing a Project Plan

One of the strongest predictors of success is having a well-developed project plan. While we have discussed some of the elements of the plan in the sections above, this section provides a step-by-step guide for creating a working document that outlines the steps and work necessary for completion of the project. It is an essential document for keeping the project on task.

The document does not need to be lengthy. It can present the answers to the following questions in a bulleted list. The important thing is to address the questions, stimulate a thought process and create a tool to hold the team accountable.

A project plan answers the following questions:

- What is the purpose of the project (what problem is it going to solve)?

- What are the key deliverables?
- What is the timeline, including deadlines?
- Who are the project's team members and what role will they play?
- What resources will be needed to complete this project?

Before writing the plan, work with students to gather as much information as you can and document:

- the goal of the project
- the client's needs and expectations
- the list of CAPS students and client representatives who makes up the team
- the communication process
- the decision-making process: how the team's work will be evaluated

The table on the following page can serve as a guide to stimulate the thought process.

Project Planning Worksheet

Use this worksheet as a guide to brainstorm and think through all the aspects of your project before writing a project plan. Be as thorough as possible to ensure a well-developed project plan.

Client Information		
	Answer	Notes
Who is the client?		
What is the client's business? (high-level description)		
Who are additional stakeholders the team should be aware of?		
CAPS Team Information		
	Answer	Notes
Who makes up the CAPS team?		
What is each team member's primary contribution?		
Project Specifics		
	Answer	Notes
What is the project?		

Answer		Notes
What are the objectives of the project?		
What is the goal of the project?		
What is the client's expectation in terms of outcome(s)?		
What are the deliverables?		
What are the specific tasks that must be completed to meet the objectives and goal?		
What is the client's approval process (if applicable)?		

Feedback & Communication

Answer		Notes
Who is the client's primary contact on this project?		
What is the client's preferred mode of communication? (Email / phone / text)		
What is the client's availability for meeting with the CAPS team? (Specific dates/times that work best?)		
How will the team gather feedback?		
Who will sign off on changes or deliverables?		

Answer		Notes
Which CAPS team member will be responsible for communicating directly with the client?		
What is the client's expectation for project updates?		

Timeline

Answer		Notes
What time allotment will be given to the project?		
How many days will be devoted to the project? (Will this be one semester? A year?)		
What is the timeline and dates associated with each task?		
What is the deadline for the project?		
Are there dates when the CAPS team will not be available?		
Are there dates when the client will not be available?		

Resources

Answer		Notes
What resources will be needed for this project? (Money / time / tools / training / etc.)		

Answer		Notes
What resources will be needed to complete each task?		
Where will these resources come from?		
Other		
Answer		Notes
What obstacles may interfere with delivering the product? (In other words, is there anything the team can think of that would hinder the ability to meet the deliverables and the goal?)		



The most well-thought out plans will often change as the project progresses. Remember, the project plan guides the project. It helps to organize thoughts, formulate what might work for the project and serves as a discussion tool for planning and implementation.

Creating a Timeline and Work Schedule

Projects require timelines and work schedules for both the overall project and for the various project components. When preparing the project plan, be sure to assign tasks a timeframe: a deadline for completing each task. Then, prepare a weekly schedule for executing those tasks. For example, if the project has a deadline of twelve weeks, what is to be done within those twelve weeks and what is the deadline for each of those tasks?

Changes in schedule will occur, so some flexibility is necessary. However, help students realize the time will come when they need to finalize their research, findings, ideas and so forth. Allow enough time for “failure” (when the project requires students to pivot a bit because something is not working) and “recovery.”

Consider these methods to assist students with good time management:

- Work with students to set reasonable timelines for each task.
- Periodically remind students of the timeline.
- Discuss time management skills with students.
- If the project pivots or timelines are changed, ask students to explain the reason. Work with students to adjust the timeline to meet the new action items.

Monitoring Students and Communicating Progress

For projects, the role of the instructor is to act as a guide-on-the-side. This means facilitating the process and love of learning and teaching skillsets while encouraging and allowing students to take responsibility for their work and how they manage that work.

When monitoring students, be mindful of the following:

- **Facilitate collaboration:** Are students working collaboratively? If not, why not and what can be done to correct the issue?
- **Facilitate responsibility:** Have students carried out their primary role, but also taken some responsibility for the roles and interactivity of the team?
- **Facilitate communication:** Are students communicating progress with each other on a regular basis?
- **Facilitate engagement:** How engaged are students in the project? Both individually and as a team.
- **Monitor resources:** Do students have what they need to complete each task and the overall project?
- **Monitor organization:** As new ideas come to light or the number of procedures that must be followed increase, are students staying organized, tracking progress and maintaining focus?

Management by Walking Around (MBWA)

Management by walking around is the habit of making sure to “stop by” to talk with students face-to-face to get a sense of how they perceive things are going and to listen to whatever may be on their minds. It fosters empowerment by ensuring students feel relevant and that what they are thinking, doing and perceiving matters. This form of management helps students feel more visible and invites suggestions for doing things better.

A good set of guidelines:

- Walk around on a regular basis. Walk around weekly to meet with every student involved in the project. Repeat this routine each week.
- Be prepared to ask students at least three questions. Focus on questions that will facilitate a meaningful discussion. Ask students for ideas, how to improve the process, how to improve the product, etc. The goal is to strike up a conversation.
- Question and listen without criticism. MBWA is, in part, about creating an environment of openness. Discussions are based on a positive exchange of ideas.
- Do not forget about body language. Body language can communicate more than a verbal exchange. “Speaking” is not just about words. Our body language tells a story.

Monday – Identify tasks

Midweek – Work the tasks

Friday – Report on progress

Communicating with Partners

By creating a project plan, students will have identified the method and frequency of communication with the client. Instructors do not place themselves between the student and client (remember, the primary relationship is between the student and client), but instructors are available as a resource to help mitigate issues.



Insight



Be sure to meet with students on a weekly basis. It can work as an intervention tool to ensure projects are on track.

**Eric Kessler, Bioscience Director,
Blue Valley CAPS**

Finalizing the Work & Presenting a Product



During this phase, students reflect on their work (see the following section for more information on reflection), present a final action report and present the final product to the client and larger audience. This is an opportunity for students to showcase their learning and to obtain feedback for improvement.

Reflection followed by a final action report focuses on the overall goal of the project: what worked and what did not. Feedback flows between the students and client with the students reporting their experience to the client and the client reporting their experience to the students.

It is also an opportunity for instructors to assess the process and outcomes.

- Did students fully understand the expectations of the quality of work expected? Were they shown real-world examples of the quality that would be expected?

- Were “check-in” points frequent enough to allow students to make adjustments when needed?
- Were students given enough time to revise their work if needed?
- Was the project motivating to students?

After Action Report

After Action reports lay out the project outcomes at a glance. It includes a client overview, the client's business model, critical success factors, supply chain, a summary of project results, successes, areas for improvement and recommendations for next steps. This should be used to review and discuss the project as a team.

After Action Report

[Name of Project]

Client Overview

Project: [Describe the goal of the project.]

Target Market: [Briefly describe the target market. For example: Families with member who has autism; Schools which have programs for kids with autism]

Client's Business Model:

Client's Critical Success Factors: [Critical Success Factors are those variables or circumstances necessary to enable a positive outcome for a business program or strategy. The CSFs are the expected causal variables of a particular desired outcome.]

Client's Supply Chain: [For example: Making the product; Consumer purchasing product; Distributing the product]

Summary of Project Results: [Students describe the outcomes of the project.]

Successes: [Students list successful outcomes.]

Areas for Improvement: [Students reflect on what could have been done better.]

Recommendation(s) and Next Steps: [Students report on opportunities for further development or perhaps to "shelf" the product.]

Ways to Showcase Student Work

CAPS affiliates showcase student work in a number of different ways. Students' work and efforts are truly valuable. What makes Pro-BL exciting and fun is the opportunity for students to share their work to a real-world audience that values their effort and achievements.

CAPS affiliates have provided a list of some of the ways in which student work has been shared:

- Hosting an Innovation Celebration with booths for students to display their work
- Students presenting designs to a panel of local community industry experts
- Media coverage in local print newspapers
- The CAPS affiliate's local CAPS website
- Social media
- Information brochures to local businesses and community organizations
- Tours of CAPS programs
- Students giving a brief presentation at a local event

Time for Reflection

Reflection helps students think about what is working well and what is not working well. When students (and instructors) take time to reflect, it provides opportunities to make needed adjustments throughout the process and semester. It is a necessary component of Pro-BL. So, build it into the schedule. This is a way in which learning happens. Students answer, “What happened? So what? And now what?”

There are a number of ways or activities to facilitate this type of learning. An article titled *Helping Students Reflect on their Group Work*, UNSW Sydney, offers some great tools for engaging reflection.

Learning Journal: Students keep a learning journal to reflect on what the team is doing well and where improvements could be made. If shared, these journals are an effective way to monitor the team's progress.

Checklists: Projects require preparation and execution. Using checklists helps students to reflect on each other's performance. What needs to be done? Why hasn't it been done? How do we need to adjust to get back on track? Checklists are a great way to make sure time is built in for reflection by placing it as a task on the list.

Peer Review and Discussion: During peer reviews, students reflect on their own performance and each other's. By doing so, students gain a better understanding of the group's processes and behaviors. Discussing allows for sharing aspects of the project they found challenging or rewarding and how things could be improved moving forward.

After Action Report / Reflective Paper: Students complete and submit a report on group processes to help them reflect on how they got to know each other as a group, how they organized meetings, how they allocated tasks, what processes they used to develop a group presentation, etc.^{vii}

Gallery Walk: Using a post or other means, students post pieces of their work on a “wall”—as in an art gallery—so people can move around the view it. To prepare for the Gallery Walk, participants create posters with these seven parts:

1. Project Title
2. Grade Level
3. Project Idea (summary of main issue/task/purpose)
4. Driving Question
5. Content (summary of key standards/topics)
6. Major Products (what students will create)
7. Public Audience (who will see & hear presentations or use products)^{viii}

The Buck Institute has a great guide as to exactly how to structure a gallery walk around project-based learning (The Resources section of this module provides a link to their blog post.)



We do not learn from experience...we learn from reflecting on experience.

John Dewey

Action Checklist #3

Executing Projects

- Recruit clients and projects**
 - (If recruitment has not yet been done.)
- Present potential projects to students**
 - Ask the students to select projects and form teams.
- Train the team on project management skills**
- Train the team on technical skills required of the project**
- Ask student teams to meet with the clients to identify the specific requirements of the project**
- Guide students through the development of a Project Plan**
 - Ensure rubrics and other tools have been developed to assess the project both during and upon completion.
- Guide students in developing a communication plan**
- Students finalize the product / work**
- Create an After Action Report**
- Students present the work to the client and larger audience**

CAPS affiliates are eager to share experiences and can provide great insight into how they design and implement Pro-BL. So, reach out! A list of CAPS champions is provided at the end of this Module under Resources & Tools.

4 Assess Outcomes

Much has been written on assessing learning. The assessment landscape is exploding. For purposes of this module, we focus on the “how-to” and CAPS’ experiences and methods. The Resources section of this module offers a list of sources to learn more about assessing Pro-BL.



Assessment Overview

Assessment relies on more than typical classroom tests and quizzes alone. It encompasses a variety of techniques, tools, activities and measurement instruments. Instructors use a variety of means to gather evidence on learning, e.g., observation, questioning, quizzes, reflection, feedback and student self-assessment. Feedback and information gathered through assessments provides instructors with valuable information for improving their teaching methods and for empowering and motivating students.

What to Assess

Assessing Pro-BL is about evaluating key measures such as how well students have mastered content, competencies (creativity, social skills, finding needed resources, presentation or style) and how well students have mastered professional skills.

As Michael Hernandez notes in *Evaluation within Project Based Learning*, “...students learn much more than the content...we want to acknowledge not only what they learned, but how they came to learn it so they can use these processes in the future.”^x While assessing content knowledge is still relevant, we can also assess students for their passions and interests.^{xi}

As Dave Lash and Grace Belfiore note in *Assessment Design for Broader, Deeper Competencies, Report 12 of the MyWays Student Success Series*, “The challenge in designing assessment for the whole learner is **creating new combinations comprised of established assessment tools, processes for feedback, and methods for reflection from within and outside the education sector**, together with new tools and processes for collecting evidence where gaps exist.” They also state that the “**nature of the learning design requires a system of assessments that are also authentic, student-driven, and holistic, and that these need to be integrated with and extend that learning.**”^{ix}

How to Assess

Project goals and expectations should be clearly outlined up front—before the project begins. It informs the assessment and what to evaluate. Assessment takes the form of both written and verbal feedback. To obtain the most informative feedback possible, the assessment should involve students, instructors and clients. Clients can provide valuable feedback on their experience of how students performed, what they learned and what and how they contributed. In some cases, allowing peer-to-peer student evaluations can be incredibly insightful and a great learning experience for students.

Allowing students to self-evaluate, using rubrics, and oral and written methods, causes students to think deeply about their successes, goals and mistakes for the next time.

Assessment Strategies

Formative and performance assessments are two core strategies for assessing outcomes. When interconnected, these are used to measure student learning in a course that has outcomes that include critical thinking, problem-solving, collaboration and communication. These types of assessments are particularly valuable in Pro-BL, when a test score will not inform how students will learn the concepts that come next.^{xii}

Using these assessment strategies, instructors and students gauge progress, reflect, provide feedback and inform how learning takes place moving forward. Rubrics will help determine whether students have clearly identified a problem or opportunity, truly



Helpful Tip

- ✓ Read *Assessment Design for Broader Deeper Competencies, Report 12 of the MyWays Student Success Series* for an in-depth look at assessment.

collaborated, built on their social skills and presented feasible and research-based solutions. Done well, students are empowered to take more ownership of their learning.

Assessment should be incorporated at the beginning of a project, throughout and at the 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 1) be used by instructors to improve teaching, 2) by students to improve learning and 3) by partners to evaluate the scope and outcomes of projects and their experience with the students—from beginning to end. In addition, it prepares students for the real world by becoming comfortable with this type of feedback.

Formative Assessment

This form of assessment is a process that engages both instructors and students in evaluating the actions undertaken and the results of those actions—how students progress through the project and **how** learning occurs. It can provide a clearer picture of students' understanding of the learning targets and criteria for success.

It is an effective tool or process when student learning is monitored frequently, allows for student self-assessment and allows them to guide their own learning. Students and instructors receive real-time feedback that guides adjustments to both learning and teaching. Formative assessment can be used for foundational knowledge and higher-order cognitive and non-cognitive skills. It also requires a culture of open feedback. This means students and instructors feel comfortable being open to sharing.



Helpful Tip

- ✓ NGLC MyWays *Success Series: Assessment Design for Broader, Deeper Competencies: Report 12 of the MyWays Student Success Series* provides an in-depth look at assessment.

Formative assessment helps instructors:

- **Consider** each student’s learning needs and styles and adapt instruction accordingly
- Track individual **student achievement**
- **Provide** appropriately challenging and motivational instructional activities
- Design **intentional and objective** student assessments
- Offer all students **opportunities for improvement**

The Role of the Teacher in High Quality PBL, Lauren Greenstein, “[What Teachers Really Need to Know about Formative Assessment](#)”, Chapter 1, blog, ASCD, 2010

Guidelines for this type of assessment of CAPS projects:

Why it is useful: Assessing learning outcomes using reflection, feedback and other means is one of the most powerful strategies in enhancing achievement. It allows both instructors and students to dig deeper to measure hard-to-measure competencies such as creativity and social skills.^{xiii} It informs us more than testing. It can raise student performance. Finally, it is outcome-based.

When to use: Formative assessment is utilized throughout the project—from beginning to end.

What it measures: In *What Teachers Really Need to Know about Formative Assessment*, Laura Greenstein states that assessment places an emphasis on how well students receive information, understand it and how they can apply it rather than emphasizing how instructors deliver information.^{xiv} As instructors gather information, and learning needs, instructional adjustments can be made to improve learning.

Examples of This Type of Measurement:

Teacher-initiated formative feedback, including: gathering rich evidence of student progress toward transparent learning goals through a variety of means (observation, checks for understanding, questions, student response systems); providing feedback that is rapid, descriptive, and focused at the task, process and self-regulation levels; and using feedback to adjust learning and instructional activities.

Student self-assessment and self-reflection, where students are deeply involved in gauging their own progress toward learning goals, and reflecting on their own learning processes. Includes student-run conferences.

Peer-assessment, including gallery walks, feature critiques, pair-and-shares using rubrics, or even group discussions where students give each other feedback on ideas that are then further developed.

Digital forms of formative feedback and adaptation of instruction through adaptive software and adaptive learning games or simulations that are set up to respond to performance as it happens.

MyWays Success Series: Assessment Design for Broader, Deeper Competencies

Performance Assessment

Through process assessment, students are demonstrating knowledge and skills by working hands-on in projects that require those skills. For CAPS, this means profession-based projects that feature real-world problems or opportunities that require students to reach beyond their comfort zone and to engage critical thinking, problem solving and ideation.

Guidelines for this type of assessment of CAPS projects:

Why it is Useful: Process assessment allows students to demonstrate how they apply knowledge (or what they have learned) through profession-based projects.

Key Components: The “task” of managing and engaging in a project challenges students to create a product or complete a process. Students are asked to present outcomes of their work through public presentations.

What it Measures: Performance assessment measures the level at which students are able to apply knowledge. It measures how they apply critical thinking, creativity, team-building, professional skills and communications skills while simultaneously giving them the opportunity to present a tangible result.



“

We send a questionnaire through SurveyMonkey to our business partners. Our partners tell us how well they perceive our students performed as “employees”. We ask about both professional skills and technical skills.

**Ann Hopper, Coordinator,
GOCAPS Lake Region**

Examples of This Type of Measurement:

Assessment of real-world tasks or junior versions of them using assessment rubrics — both extended, curriculum-embedded models (CEPA) and bounded PAs from task banks. (See Report 11 on junior versions.)
Public performances and public exhibitions of the outcomes of project work.
Portfolios, student logs, and journals that document the learning process, reflections, and revision of work.
CEPA is incorporated into some deeper learning, project-, work-, and service-based learning, and competency-based learning models, such as EL Education, Envision, High Tech High, New Tech Network, Sanborn (NH), and Summit Public Schools.

MyWays Success Series: Assessment Design for Broader, Deeper Competencies

The table on the following page was developed by MyWays™ and outlines assessment strategies for broader and deeper competencies.

Five Assessment Strategies for broader and deeper competencies

	Points and principles	Illustrative examples
<p>Formative assessments</p> <p>To provide the essential foundations for effective learning and personal development</p>	<ul style="list-style-type: none"> • Focus on process over product • Rapid, ongoing feedback loops • Adapting subsequent instruction or experience • Requires clear, transparent learning goals, progressions • Action and improvement cycle motivates growth mindset 	<ul style="list-style-type: none"> • Teacher checks for understanding: traditional quizzes, exit tickets, and student response systems, with follow-up. • Self-assessment/reflection: students gauge their own progress and reflect on their learning process; includes student-led conferences. • Peer assessment: gallery walks, feature critiques, pair-and-shares, and group discussions. • Revision, iteration, re-dos to mastery, improved quality. • Digital adaptive software or simulation with feedback loops; digital collection of behavioral data.
<p>Performance assessments</p> <p>To provide the rich context for development and measurement of agency and capability</p>	<ul style="list-style-type: none"> • Engages student agency • Less “proxy”; closer to complex adult world • Longer-term performance assessments embedded in PBL and competency-based curriculum offers the most opportunities to address broader competencies • Still establishing best “grain size” for learning and assessment 	<ul style="list-style-type: none"> • Assessment of real-world tasks or junior versions thereof, using assessment rubrics and learning progressions. • Public performances, especially if assessed in part by members of professional communities of practice. • Public exhibitions of project work, including learner explanation, demonstrations, and response to queries. • Student logs and journals that document process, reflection, and revision.
<p>Multiple measures</p> <p>To address the whole learner and the breadth of competencies within next generation learning environments</p>	<ul style="list-style-type: none"> • Multiple measures create rounded learner profile • Coverage across diagnostic, formative, and summative • Different types of measures are needed for different types of competencies and aspects of competency such as agency • On Habits of Success and Wayfinding, as well as agency generally, tools are not yet “there”; multiple measures create checks 	<ul style="list-style-type: none"> • Performance and formative assessments (above) are vital for authenticity, complexity, and integration, and need to be augmented with badging and quality reviews (below). • Also useful as multiple measures: extended written response, situational judgment (hypothetical scenarios), direct observation, behavioral data (or “bio-data”), improved self-reports, forced choice, self-reflections, teacher reports, and so on. • Includes required accountability testing, pre- and post-tests, and non-performance summative assessment. • “Assessment” may not even look like traditional assessment, from stealth assessment in computer gaming to informal teacher assessment of student interests and real-world capacities.
<p>Badges and micro-credentials</p> <p>To integrate “anywhere, anytime learning” within personalized learning approaches</p>	<ul style="list-style-type: none"> • Badges can recognize participation, skill, and achievement • Flexible assessment for learning outside school, especially in the community (PASA, Cities of LRNG), at work (internships), and in agency and Habits of Success areas • Requirements: modular, visible, transparent, and portable 	<ul style="list-style-type: none"> • All badge types are useful, but badges based on demonstrated and verified skills (micro performance assessment) hold the most promise for broader competencies. • Examples of badging systems: Microsoft, Chicago City of LRNG, Summit Public Schools, and Del Lago Academy’s Competency X. • Other micro-credentials: Career readiness certificates (JAG’s competency modules to ACT WorkKeys); also industry, educational, and non-credit certificates that can be “stacked” to lead to degrees (see NAFTrack).
<p>Quality reviews</p> <p>To ensure the quality of the learner experience when outcomes can’t be measured (and even when they can)</p>	<ul style="list-style-type: none"> • In Habits of Success and Wayfinding as well as agency overall, student outcome tools are still emerging. Indeed, schools are only now adding coverage; evaluation of inputs, experiences, and outputs is likely to increase quality and effectiveness even if student outcomes cannot be measured precisely 	<ul style="list-style-type: none"> • Evaluating learner experience, looking at how and why, what seems to work when, and in what context. • Evaluating inputs and activities by using quality standards documents for internships (BP), career exploration (LL), service learning (NYLC), and so on. • Evaluating the school climate and culture to support agency and Habits of Success (established and new survey tools). • Evaluating educator understanding and use of holistic learning and next gen assessment.

Focused Conversation

Using this method of facilitated questioning enables a focused conversation with a group of students. It is based on the theory that people need to be cognizant of the actual data and deal with their emotional responses in order to undertake better analysis and decision-making.

ORID is a method of structured conversation. It is a way to analyze facts and feelings, to ask about implications and to make decisions intelligently. Through this method, four types of questions are included:

- **Q—Objective questions: What do we know about this?** This question seeks to discover what the group knows (the facts) about the topic.
- **R—Reflective questions: How do we feel about this?** This question seeks to discover how people felt about the topic being assessed. It focuses on what they like and what they did not like.
- **I—Interpretive questions: What does it mean for you?** This question uncovers issues or challenges that may have occurred.
- **D—Decisional questions: What are we going to do?**^{xvi} This question asks people to come to a group decision or response.

This method of questioning should be done in the order above (ORID) and cover all four types of questions. The sample questions below have been adapted from The Iowa Evaluator Approval Training Program III: Assessing Academic Rigor Module – based on SRED Learning-Centered Leadership Program and the Wallace Foundation.

Sample Questions

Objective questions: *ORID starts with these because they are easy to answer and assist in getting the facts and information.*

What?

- What do you remember most about this experience?
- What did the ... actually do during...?
- What did you/they accomplish?
- What did you observe throughout this project?



Reflective questions: *These questions elicit an emotional response that invites a deeper level of participation.*

Reflect on “The what”

- What part of the project will be the hardest?
- What part of the project will be the easiest?
- How did you feel the project went?
- What did you feel was most successful?
- What did you feel was least successful?
- What concerns you?
- How did you feel as you were...?
- What did you feel was most exciting about this project?
- What do you feel you could have done differently?
- What do you feel our partner/instructor/others could have done differently?

Interpretive questions: *These questions ask students to brainstorm and share ideas.*

Reflect on “So what”?

- What did you learn about yourself working on this project?
- What are some of the things that could have been done to create a better learning experience for you?
- What things could you have done differently that would have resulted in better outcomes?

Decisional questions: *These questions develop opinions/options/solutions that lead to future actions. They clarify expectations for improvement or change.*

Reflect on “Now what”?

- What will you do differently?
- What will continue to do the same in the future?
- Which of your skills will you further develop? And what will you do to develop them?
- What things will you do to ensure future success and/or prevent future failure?
- What are your next steps? What actions/ideas has this triggered for you?
- What support will you need to continue to work on your areas of concern?
- What goals have you set for yourself that are related to our conversation?

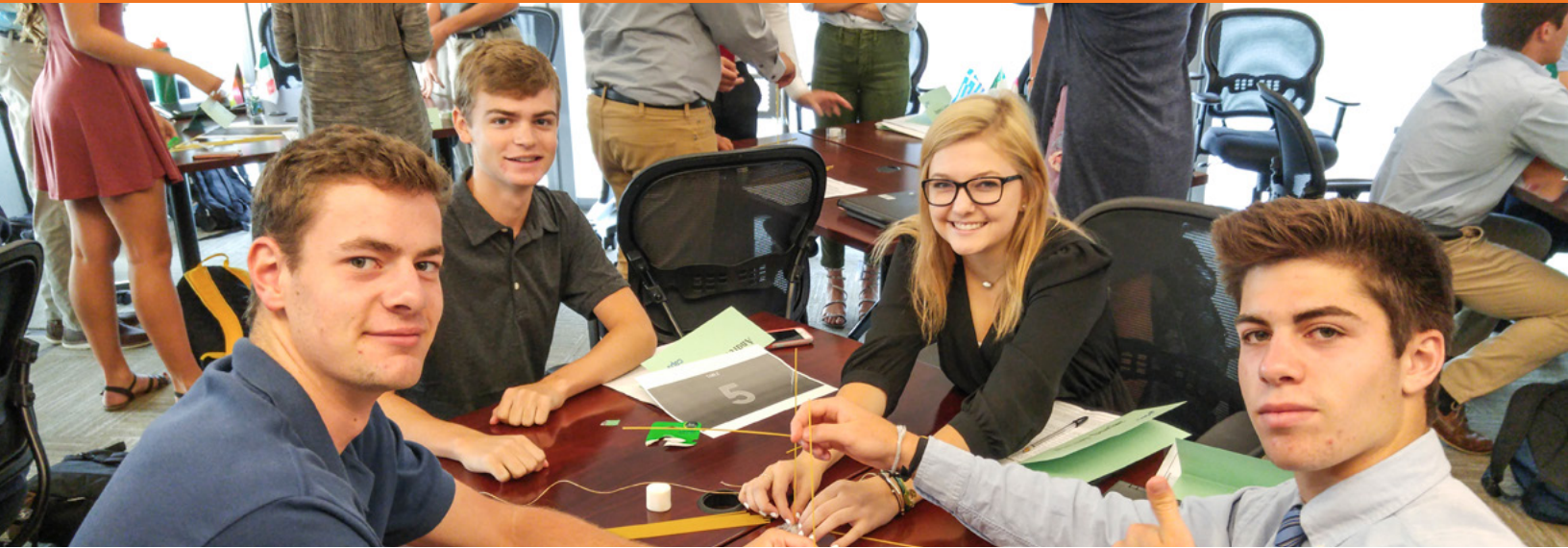


Helpful Tip

- ✓ [This website](#) explains the ORID process in more detail. This type of questioning can be used in most any situation (after a workshop, for projects, etc.). Check it out!
- ✓ Also read *The Art of Focused Conversation for Schools*, Third Edition: Over 100 Ways to Guide Clear Thinking and Promote Learning 3rd Edition by Jo Nelson.

Action Checklist #4

Assessing Outcomes



- Deliver rubrics and other tools to measure outcomes**
 - Allow for student self-assessment.
 - Allow for peer-to-peer reflection and assessment.
 - Allow for client feedback.

- Create opportunities for students to demonstrate what they have learned**
 - This may include presentations; video; presenting a product.
 - Make sure the community has an opportunity to attend the product showcase and/or presentation.

- Evaluate the experience and outcomes**
 - Take time to reflect individually
 - Discuss what worked well.
 - Discuss what did not work well.
 - Discuss what could have been done differently.
 - Discuss successes.
 - Discuss failures.

CAPS affiliates are eager to share experiences and can provide great insight into how they design and implement Pro-BL. So, reach out! A list of CAPS champions is provided at the end of this Module under Resources & Tools.

Resources & Tools

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

Have Questions?

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General Research & Resources

America Achieves

America Achieves creates clear pathways for economic advancement, civic engagement, and success for all in a rapidly changing economy. Partnering with cutting edge organizations across three sectors—education, business, and government—we create connections, networks, and agile systems needed to match the magnitude and pace of the shifts in the economy.

[Click here to view website](#)

Colorado Education Initiative

CEI is a statewide nonprofit organization that invests time, expertise and dollars in K-12 public education. We are rooted in a vision of equitable outcomes for every kid that drives a strong bias for action, focused on sustainable change to the system.

[Click here to view website](#)

HQ PBL

HQ PBL believes all students, no matter where they live or what their background, deserve access to high quality Project Based Learning (HQPBL).

[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](#)

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](#)

P-TECH

P-TECH 9-14 School Model is a pioneering education reform initiative created by IBM, to prepare young people with the academic, technical and professional skills required for 21st Century Jobs and ongoing education.

[Click here to view website](#)

Resources for Understanding Project-Based Learning

America Achieves: Leveraging Project-Based Learning to Improve Career Readiness

[Click here to view guide](#)

Getting Smart: Introducing a Framework for High Quality Project Based Learning

[Click here to view guide](#)

John Larmer, "Gold Standard PBL: Essential Project Design Elements" April 21, 2015

[Click to view guide](#)

Blogs

Urvi Bhagi, "12 Reasons Why Project-Based Learning Is Better Than Traditional Classroom Learning," eLearning Industry blog, Jan. 19, 2017.

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[Click here to view book](#)

CAPS Network Best Practices Toolbox

Under Construction....

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