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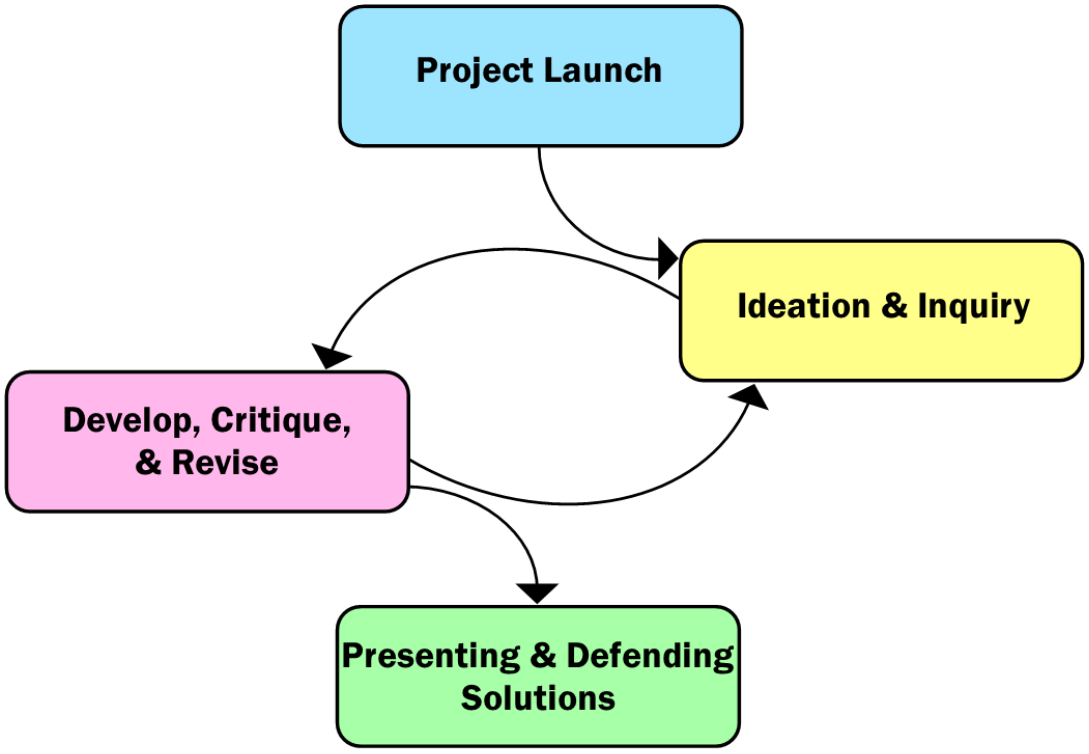
Essential Components for Implementing Project-Based Learning

Purpose

The purpose of this document is to offer guidelines and support in implementing Project-Based Learning. The guidelines describe key phases of Project-Based Learning, the continuum of implementation, and formative and performance assessments that support learning.

Introduction: Key Phases of Project-Based Learning

Larmer, Mergendoller, and Boss (2015) outline four key phases of Project-Based Learning: project launch, inquiry, development (which includes critique and revision), and presentations. Teachers serve as both facilitators and instructors through each phase with the aim of supporting the development of an authentic and public product. Although ideation and inquiry initiate the middle two phases of Project-Based Learning, these components can take place simultaneously. Students will continue inquiry as they revise their process and product.



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The Four Phases of Project-Based Learning

Project Launch

Project Launch can include an introduction to the driving question via an entry event. The purpose of entry events is to encourage curiosity and support an initial interest in the content to be explored. These events can vary depending on the content and proficiency/grade level of the students (e.g., a field trip, simulation of a real-world scenario, a video, hands-on activity). After an entry event, students should be able to start considering their "need to know" -- the relevance of the question -- and who the target audience could be.

Ideation & Inquiry

Students build knowledge, understanding, and skills to answer the driving question. They find resources that they can use, determine and assign roles for collaborative components, and engage in lessons that support their solutions to the challenge statement or driving question.

Develop, Critique, & Revise

This process guides students through questions such as "Do I need more information?" and "Is this clearly communicated?" Peer critique or feedback from field experts and product revision are interwoven throughout the inquiry process. Students will go back and forth between the revision phase and inquiry phase.

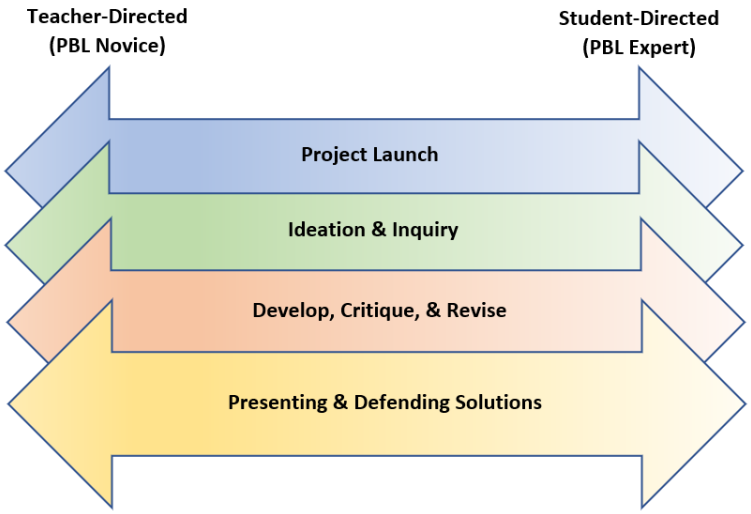
Presenting & Defending Solutions

Products should have a lasting impact on the public. This can consist of presenting a solution to a community issue or inventing a product that helps the world. Releasing the product to the public demonstrates the value of the students' learning processes and their place outside of school. Additionally, students are actively and authentically reflecting on their work and its future applications as they present their product and explain their process.

Educator and Learner Readiness

Project-Based Learning is not an "all or nothing" endeavor and no educator should shy away from exploring its many possibilities due to a lack of experience or confidence in implementing it "correctly." The four stages of Project-Based Learning can be implemented with varying degrees of scaffolding and support, depending on the comfort level of the teacher and readiness level of the learner.

The four stages of Project-Based Learning exist along a continuum of learner agency, ranging from being completely teacher-directed to being completely student-directed. Based on students' readiness level, the amount of student-directed learning can increase in some stages and remain more teacher-directed in others. As teachers and students become more comfortable with Project-Based Learning and the freedom it can provide, teachers can ease up on the reins and learner agency can increase all around.



For example, a teacher's first endeavor with Project-Based Learning may begin with a project launch that falls to the left of the continuum (i.e., a teacher-created driving question or an entry event that is orchestrated completely by the teacher), but other aspects of the project might trend more toward the right end of the spectrum (i.e., students designing their own inquiry path with minimal teacher input or determining how they wish to present their learning at the end of the unit). Considerations must also be made for a blended learning environment in which teachers must decide which parts of the learning experience would work better synchronously and which could work well asynchronously, and plan accordingly.

From Novice to Expert: What Inquiry Looks Like at Different Levels

During the inquiry stage of Project-Based Learning, students build knowledge, understanding, and skills through exploration and information gathering and analysis. This can look different depending on the amount of experience a student has with Project-Based Learning. According to the College, Career, & Civic Life (C3) Framework for Social Studies, "Helping students develop a capacity for gathering and evaluating sources and then using evidence in disciplinary ways" is one way teachers can support students in an inquiry process (C3 Framework). Since research involves accessing the results of someone else's inquiry process, teachers should strive to provide just the right amount of guidance and support in order to facilitate active data collection, thus promoting a student's personalized approach to understanding of the content.

Assessment for Learning

Project-Based Learning integrates well into a proficiency-based system as it promotes a learning environment that is rich with opportunities for assessment for learning. Assessment *for* learning (as opposed to assessment *of* learning) is a process that requires certain shifts for educators and students, both in mindset and practice. According to the Assessment for Learning Project (AFL), assessment for learning can take place only in a learning environment in which assessment:

- is an ongoing process, integrated with curriculum and instruction;
- prioritizes feedback and reflection;
- produces rich and varied evidence of learning;

- is comprised of strategies that enact more equitable learning environments; and
- is a collaborative partnership between students and teachers (AFL).

Providing feedback through formative assessment and the use of performance assessments are excellent ways to incorporate Project-Based Learning into a proficiency-based system in which assessment for learning is prevalent.

Formative Assessment to Provide Feedback and Help Students Stay on Track

Formative assessment is an intentional, ongoing part of the learning process for both students and teachers that elicits immediate evidence of student learning. Since the general goal of formative assessment is to collect detailed information that can be used to improve instruction and student learning *while it's happening*, formative assessment is an excellent tool to help students stay on track during Project-Based Learning. According to the Council of Chief State School Officers (CCSSO), effective use of the formative assessment process requires students and teachers to work together to integrate the following practices that are also key components of Project-Based Learning:

- Clarifying learning goals and criteria for success;
- Gathering and analyzing evidence of student thinking;
- Having students engage in self-assessment and peer feedback;
- Giving actionable feedback to students; and
- Using evidence to adjust instruction to move learning forward.

In addition, supporting intrinsic motivation through sustained inquiry means teachers need to check in on their students' responses and approaches to the inquiry process. Formative assessment during sustained inquiry can also support students' self-management skills by providing concrete milestones for key stages of the project.

Formative Assessment Strategies

The following strategies can help educators engage in formative assessment during Project-Based Learning:

1. **Mid-Point Checks:** Create a checklist or questionnaire based on the criteria of the project. Throughout inquiry, allow students to complete the checklist/questionnaire so they can reflect and determine if they are staying on track.
2. **Goal Setting & Checking:** Have students set emerging goals for their learning (allow these to be subject to change as students make new discoveries). Have goal-check sessions during which students can share if they've met their established goals or if goals need to be adjusted to fit their pursuit.
3. **Surveys**: Create surveys to gauge confidence level of students and/or student progress.
4. **Process Critiques:** Instruct students to share their process and plan with each other and use established criteria to provide feedback on each other's processes.

Performance Assessments as Evidence of Learning

Performance assessments are any teacher- or student-designed learning activity, investigation, or task that asks students to demonstrate their knowledge, understanding, and/or proficiency level. Performance assessments engage students in meaningful learning in authentic contexts, show genuine applications of knowledge, and yield a tangible product and/or performance that serves as evidence of learning (PBL Glossary; An Intro to Performance Assessments).

In The Promise of Performance Assessments, the authors describe performance assessments as follows:

> The strength of performance assessments—and the source of their validity—is their authenticity. Performance assessments are themselves learning tools that can build students' abilities to apply knowledge to complex problems while also helping students develop co-cognitive skills such as collaboration, grit, resilience, perseverance, and a growth mindset. Students who experience a steady diet of inquiry projects linked to performance assessments ultimately perform better on measures of higher order skills. Performance assessments also tend to be more valid measures of higher order thinking and performance abilities than multiple-choice measures.

For these reasons, performance assessments align seamlessly with Project-Based Learning and support student inquiry in a proficiency-based learning environment.

References

Larmer, J., Mergendoller, J., & Boss, S. (2015). Setting the Standard for Project Based Learning: A Proven Approach to Rigorous Classroom Instruction. Alexandria, VA: ASCD.

The Promise of Performance Assessments

An Intro to Performance Assessment

Council of Chief State School Officers (CCSSO)

Assessment for Learning Project (AFL

College, Career, & Civic Life (C3) Framework for Social Studies